UNIVERSIDADE DA CORUÑA

Escola Politécnica Superior

TRABAJO FIN DE MÁSTER

CURSO 2017/18

Buque de Apoyo a Plataformas Offshore "PSV"

(1200 m^3 Oil Recovery Tanks & 400 m^2 Deck cargo)

Máster en Ingeniería Naval y Oceánica

ALUMNO

Diego Jesús Bellido Trujillo

TUTORAS/ES

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FECHA

Septiembre 2018

UNIVERSIDADE DA CORUÑA

DEPARTAMENTO DE INGENIERÍA NAVAL Y OCEÁNICA

MASTER EN INGENIERÍA NAVAL Y OCEÁNICA

CURSO 2.017-2018

PROYECTO NÚMERO 18-103

TIPO DE BUQUE: Buque tipo PSV, Buque de Apoyo a Plataformas petrolíferas, "PLATFORM SUPPLY VESSELS" (PSV)

CLASIFICACIÓN, COTA Y REGLAMENTOS DE APLICACIÓN: DNV (OILREC, FI-FI I, DYNPOS-AUTR.), SOLAS, MARPOL.

CARACTERÍSTICAS DE LA CARGA: 1200 M3 OIL RECOVERY TANKS. 400 M2 libres de espacio de carga en cubierta.

VELOCIDAD Y AUTONOMÍA: 14 nudos en condiciones de servicio al 85% MCR y margen de mar del 15%. 5000 millas de autonomía.

SISTEMAS Y EQUIPOS DE CARGA / DESCARGA: Los específicos y normales para este tipo de buque.

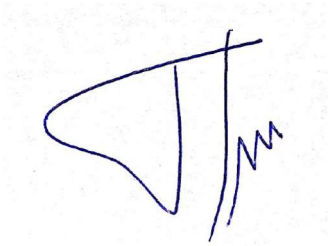
PROPULSIÓN: Diésel eléctrica con propulsores azimutales. Estudio Específico de Viabilidad de propulsión Dual HFO/LNG

TRIPULACIÓN Y PASAJE: Capacidad para 25 personas.

OTROS EQUIPOS E INSTALACIONES: Los habituales en este tipo de buques.

Ferrol, Febrero de 2.018

ALUMNO: Dº. Diego Jesús Bellido Trujillo



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CUADERNO 1

ELECCIÓN DE LA CIFRA DE MERITO Y DEFINICIÓN DE ALTERNATIVAS. SELECCIÓN DE LA MÁS FAVORABLE.

ALUMNO
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TUTORAS/ES
Marcos Míguez González
FECHA
Julio 2018

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TABLA DE ILUSTRACIONES

1 PRESENTACIÓN

El objetivo de este primer capítulo es el dimensionamiento preliminar del buque presentado en las RPA del proyecto. En nuestro caso se trata de un buque PSV, “Platform Supply Vessel”.

Un PSV es un buque de apoyo y suministros a plataformas offshore que está diseñado específicamente para dar apoyo y llevar carga y suministros a las plataformas offshore.

Ilustración 1 - Buque PSV.
Fuente: https://vadebarcos.net/2014/03/10/buques-suministro-apoyo-plataformas-offshore-psv-osv-edda-ferd/

En sus funciones de apoyo realizan tareas como la extinción de incendios, la ayuda a las tareas de contención de vertidos contaminantes, transportan herramientas y personal para realizar trabajos determinados en las plataformas.

Por otra parte, como buque de suministros, las cargas que transportan varían desde el cemento en polvo, el lodo de perforación, combustible, agua potable hasta productos químicos utilizados en las plataformas. De vuelta a tierra estos buques transportan productos y cargas para su reciclaje o eliminación en tierra.

Para realizar estas tareas este tipo de buques cuentan con una gran cubierta a popa, debajo de la cual, se disponen un amplio número de tanques.

Generalmente, la eslora oscila entre los 50 y los 100 metros, y por norma general se equipan con sistemas de posicionamiento dinámico para aumentar la seguridad en las operaciones de carga/descarga en las cercanías de las plataformas.

1.1 Un poco de historia

Durante los primeros años del siglo XX, el transporte de cargas y apoyo a operaciones de las plataformas petrolíferas se realizó con buques de pesca, cargueros o buques de guerra adaptados a sus nuevas tareas.

No fue hasta 1955, año en el que *LaBorde* diseñó y construyó el primer buque destinado a propósito para estas tareas. El Ebb Tide, un buque de 36 metros de eslora por 9,5 metros de manga, y con un aspecto revolucionario para la época, con el puente y la habilitación totalmente a proa, y una cubierta de carga a popa que ocupaba casi todo el buque (27,5 metros de eslora por 8,2 metros de manga).

Ilustración 2 - Buque Ebb Tide.
Fuente: https://vadebarcos.files.wordpress.com/2014/03/ebb_tide_2.jpg

Rápidamente las configuraciones del buque se convirtieron en las más utilizadas en la industria offshore por las ventajas que proporcionaba en las tareas de carga y descarga, manteniéndose hasta la fecha.

1.2 Tipos de Buques de Apoyo

Se puede hacer una clasificación de distintos buques de apoyo a plataformas, atendiendo a la función que realizan.

- **Buques de suministro a plataformas de perforación, Platform Supply Vessels (PSV).** Como hemos explicado anteriormente, pueden llevar a cabo tareas de aprovisionamiento siendo la función típica de estos barcos el transporte de tuberías, cemento, líquidos y carga hacia y desde tierra y las instalaciones mar adentro (offshore). Pueden utilizarse también como buques standby, de rescate, etc.
- **Anchor Handling Tug Supply** (**AHTS**). Se encargan de hacer tareas de manejo de anclas, remolque de las plataformas de perforación, transporte de suministros y personal y extinción de incendios. Se diferencian de los PSV en que están equipados con grúas para remolque y para manejo de anclas, con una popa

abierta que permita el trabajo con éstas. Además, son buques con mayor potencia para proporcionar gran capacidad de tiro a punto fijo.

Ilustración 3 - Buque AHTS.
Fuente: http://www.nauticexpo.es/prod/damen/product-25691-419569.html

- **Well Stimulation Vessel (WSV),** se trata de buques para la estimulación de la producción. Intervienen en los yacimientos de petróleo o gas para aumentar la producción, mejorando el flujo de hidrocarburos de la zona de drenaje en el agujero del pozo.

Ilustración 4 - Buque Well Stimulation.
Fuente: https://products.damen.com

- **Offshore Carrier (OCV).**Son buques que se emplean para trabajos de transporte e instalación de plataformas. Ofrecen una solución flexible y modular para las obras de instalación en alta mar.

Ilustración 5 - Offshore carrier vessel.
Fuente: https://products.damen.com/en/ranges/offshore-carrier

- **Safety Standby Vessel (SSV)**. Buques con el cometido de respuesta y rescate ante emergencias cerca de las plataformas offshore. -Fast Crew Supplier. Para el transporte rápido de tripulación y carga en ríos puertos, aguas costeras y alta mar.

Ilustración 6 - Safety Standby Vessel.
Fuente: https://products.damen.com/en/ranges/safety-standby-vessel

- **Oil spill response vessels (OSRV).** Estos buques están especialmente diseñados y preparados para luchar contra posibles derrames de hidrocarburos en la mar.

Ilustración 7 - OSRV Vessel.
Fuente: https://products.damen.com

- **Other Specialised offshore vessels (OSOV).** Incluyen otros buques especializados como de investigación, tendido de cables, maniobras de apoyo al buceo y maniobras con ROV, respuesta de emergencia, tareas de inspección, mantenimiento y reparación, o pequeños buques de perforación y FPSO.

2 BASE DE DATOS

2.1 Construcción de Base de Datos

En primer lugar, se construye una base de datos con las características principales de buques similares que actualmente están en navegación.

Se han seleccionado buques construidos entre 2006 y 2017, pero construir dicha base de datos que son buques de apoyo que tienen de característica principal el sistema de Oil Recovery, ya que nuestro buque estará basado en uno con tal sistema de una capacidad de 1200 m^3.

En nuestra base de datos, hemos encontrado buques con una capacidad de recogida de fuel oil de entre 370 m^3 y 1700 m^3.

Remarcar de nuevo, que el criterio del diseño marcado como RPA de nuestro proyecto son la capacidad de recogida de fuel y los metros de capacidad de carga en cubierta.

En la base de datos se han incluido tanto buques PSV como AHTS ya que no existe una gran información de buques PSV con las características específicas de disponer de sistema de Oil Recovery.

Toda la información correspondiente a todos los buques se presenta en el ANEXO 1 y Anexo 5.

	Buque	Armador	Tipo de Buque	Referencia	SSCC	Año	LOA	Lpp	B	D	T	TPM	Potencia (HP)	Potencia (KW)	Tank oil recov.	S.cubierta	Cb	V.max	V.serv.	Acomodacion
1	Damen8116	Damen	OSRV	http://www.damen.com/	Germanisher Lloyd	2010	81,3	70,6	16	7,5	6,5	2170	8850,6	6600	800	450		16	14,5	44
2	Damen OSRV 1050	Damen	OSRV	http://www.damen.com/	Lloyd's Register	2011	67,1	59	14	6	5	1600	4023	3000	1050	330	0,76	13	11,5	24
3	Esvagt Aurora	Esvagt AS	Standby vessel	www.zamakonayards.com	DNV	2012	87	81	19	7,5	6	2300	8850,6	6600	1550	420		16,5	14	40
5	Don Inda	SASEMAR	OSRV	www.zamakonayards.com	DNV	2006	80	69,3	18	8,25	6	3050	21456	6300	1700	500		17,5	15	22
8	DP II - Bow thruster	-	PSV / Oil recovering	www.horizonship.com		2016	65	58,5	16	6,2	5	1500	8046	6000	370	435		13	11	50
10	Focal 522	Ved shipping	PSV / Oil recovering	www.vedshipping.com	DNV	2016	78	70,2	18,6	7,8	6	4000	8046	6000	800	400	0,71	15	13	60
12	North Barents	Simek	PSV / Oil recovering	www.simek.no	DNV	2017	92	83,4	19,2	8,5	6,95	4100	11264,4	8400	800	600		16	14,5	40
13	ABS +A1	-	AHTS / Oil recovering	www.allship.net		2015	78	69,3	18	8	5,2	3000	6034,5	4500	1200	520	0,73	14,5	13	50
14	AH Varazze	Rimorchiatori Riuniti	AHTS / Oil recovering	www.rimorchiatori.com	RINA C	2014	79,9	71	19,2	7,82	6,7	2874	6436,8	4800	1020	590		17	14,5	35
15	AH Valletta	Rimorchiatori Riuniti	AHTS / Oil recovering	www.rimorchiatori.com	RINA C	2010	76,5	68	17,5	7	6,2	2775	10728	8000	1050	600	0,72	12,5	10	36
16	Maerks Master	Maersk Supply Services	AHTS / Oil recovering	https://www.kleven.no	DNV	2017	95	84,8	22	9	7,2	4500	22797	11000	920	622		16	14	52
17	VS 4612 AHTS	Wartsila	AHTS / Oil recovering	www.wartsila.com	DNV	2015	69,6	60,5	17	7	6,2	2298	12069	9000	742	473		15,8	12	24
18	ASSO Trenta	Augusta Offshore	PSV / Oil recovering	www.augusta-offshore.cafima.it	RINA C	2009	76,6	68,2	16	7	5,83	2415	7110	5332,5	993	688		14,5	12,5	18
19	Highland Chieftain	GulfMark UK ltd	PSV / Oil recovering	www.gulfmark.com	DNV	2013	79,45	70,6	16,8	7,4	6	4000	9601,56	7160	1200	648	0,69	14,5	11	26
20	Edda Fram	Skipsteknisk AS	PSV / Oil recovering	www.skipsteknisk.no	DNV	2009	85,8	77,4	19,2	8	6,5	4200	7120	5340	1036	900		16	14	14

Tabla 1 - Base de Datos reducida.
Fuente: Propia.

Definición de la simbología empleada en la base de datos:

Simbología	Definición
SSCC	Sociedad de Clasificación
TPM	Toneladas de Peso Muerto
LOA	Eslora Total
Lpp	Eslora entre perpendiculares
B	Manga
D	Puntal
T	Calado
Δ	Desplazamiento
GT	Registro Bruto
NT	Registro Neto
C.cubierta	Carga en cubierta
S.cubierta	Superficie de la cubierta
V.max	Velocidad máxima
V.serv	Velocidad de servicio

Tabla 2 - Simbología empleada en la base de datos.
Fuente: Propia.

3 DIMENSIONAMIENTO

3.1 Estimación de las Dimensiones Principales

En el siguiente apartado vamos a realizar una estimación de las dimensiones principales a partir del método de las regresiones a partir de la base de datos.

Se construirán unas regresiones y curvas que nos darán una relación entre las dimensiones y emplearemos la curva que más se aproxime a la nube de puntos, no siendo esta siempre la regresión lineal.

El proceso de cálculo consistirá en hacer una representación de la raíz cúbica del valor de la capacidad de tanques de recogida de fuel, frente a la eslora entre perpendiculares; ajustando posteriormente la nube de puntos a una recta con el fin de poder así obtener la eslora correspondiente a la capacidad del buque a proyectar, $1200\ m^3$.

A partir de dicho cálculo, obtendremos los demás valores realizando las gráficas correspondientes a cada uno de ellos.

Podemos ver a continuación una tabla en la que se recogen los coeficientes adimensionales de los buques de referencia representados en las gráficas de regresión.

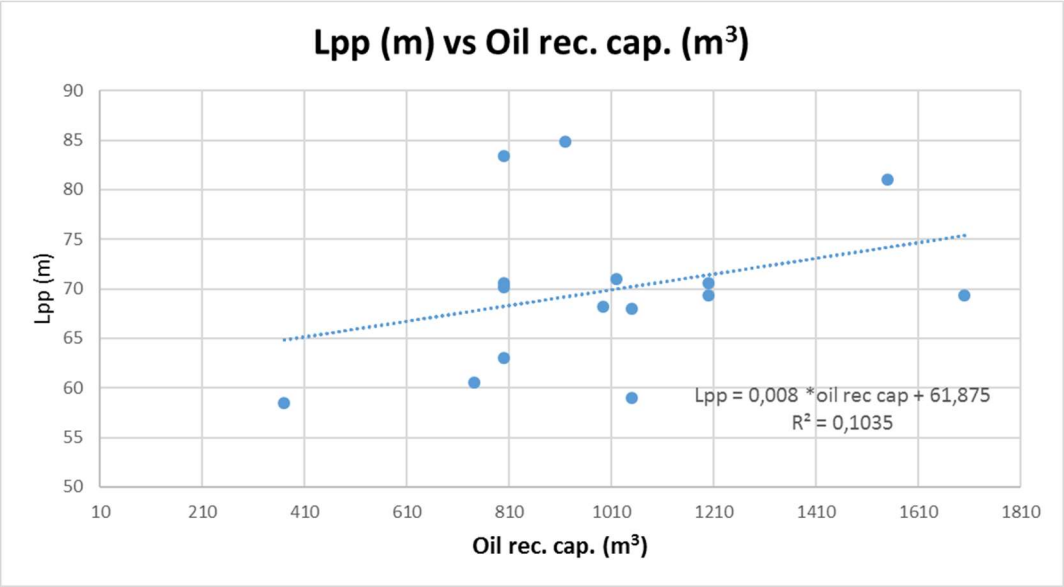
	Buque	TPM*1/3	Lpp/B	LPP/T	B/T	T/D	B/D	Lpp/D	LPP*B*D	Fn
1	Damen8116	12,95	4,41	10,86	2,46	0,87	2,13	9,41	8472,00	0,55
2	Damen OSRV 1050	11,70	4,21	11,80	2,80	0,83	2,33	9,83	4956,00	0,48
3	Esvagt Aurora	13,20	4,26	13,50	3,17	0,80	2,53	10,80	11542,50	0,50
5	Don Inda	14,50	3,85	11,55	3,00	0,73	2,18	8,40	10291,05	0,58
8	DP II - Bow thruster	11,45	3,66	11,70	3,20	0,81	2,58	9,44	5803,20	0,46
10	Focal 522	15,87	3,77	11,70	3,10	0,77	2,38	9,00	10184,62	0,50
12	North Barents	16,01	4,34	12,00	2,76	0,82	2,26	9,81	13610,88	0,51
13	ABS +A1	14,42	3,85	13,33	3,46	0,65	2,25	8,66	9979,20	0,50
14	AH Varazze	14,22	3,70	10,60	2,87	0,86	2,46	9,08	10660,22	0,55
15	AH Valletta	14,05	3,89	10,97	2,82	0,89	2,50	9,71	8330,00	0,39
16	Maerks Master	16,51	3,85	11,78	3,06	0,80	2,44	9,42	16790,40	0,49
17	VS 4612 AHTS	13,20	3,56	9,76	2,74	0,89	2,43	8,64	7199,50	0,49
18	ASSO Trenta	13,42	4,26	11,70	2,74	0,83	2,29	9,74	7638,40	0,48
19	Highland Chieftain	15,87	4,20	11,77	2,80	0,81	2,27	9,54	8776,99	0,42
20	Edda Fram	16,13	4,03	11,91	2,95	0,81	2,40	9,68	11888,64	0,58

Tabla 3 – Coeficientes adimensionales, buques de referencia.
Fuente: Propia.

3.1.1 Eslora entre perpendiculares (Lpp)

A continuación, calcularemos la eslora entre perpendiculares del buque de la siguiente forma:

Hemos realizado la gráfica que muestra la representación de Lpp frente a la capacidad de recogida de fuel (Oil Recovering capacity) así como la recta de regresión lineal con su correspondiente ecuación a partir de la cual calculamos la Lpp de nuestro buque.



La ecuación de ajuste lineal obtenido es:

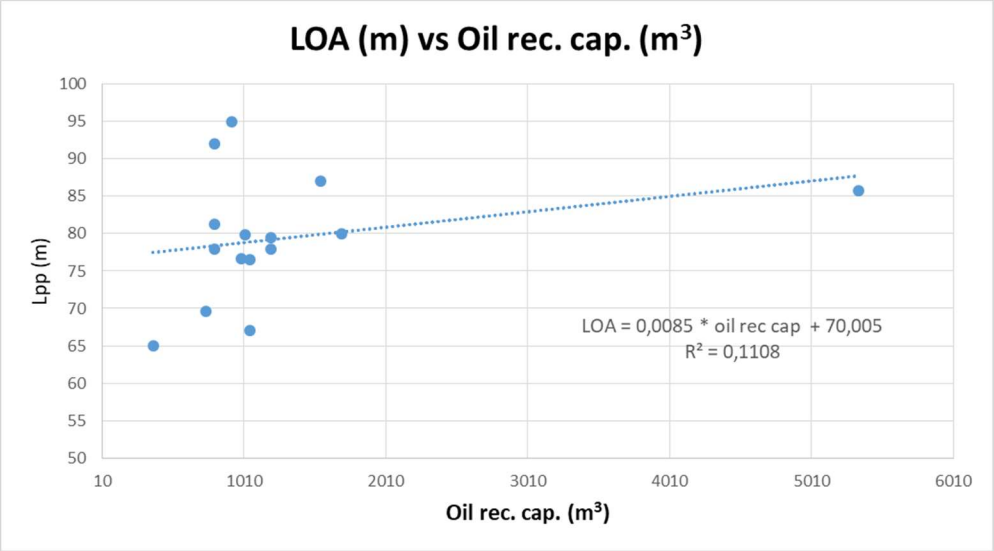
$$Lpp = 0{,}008 * Oil\ Rec.cap. + 61{,}875$$

Con lo cual introduciendo el valor del de nuestro proyecto 1200 m^3, se obtiene una eslora entre perpendiculares:

$$\boldsymbol{Lpp = 71{,}48\ m}$$

3.1.2 Eslora total (LOA)

También podemos realizar una estimación de la eslora total de la misma forma que para Lpp:



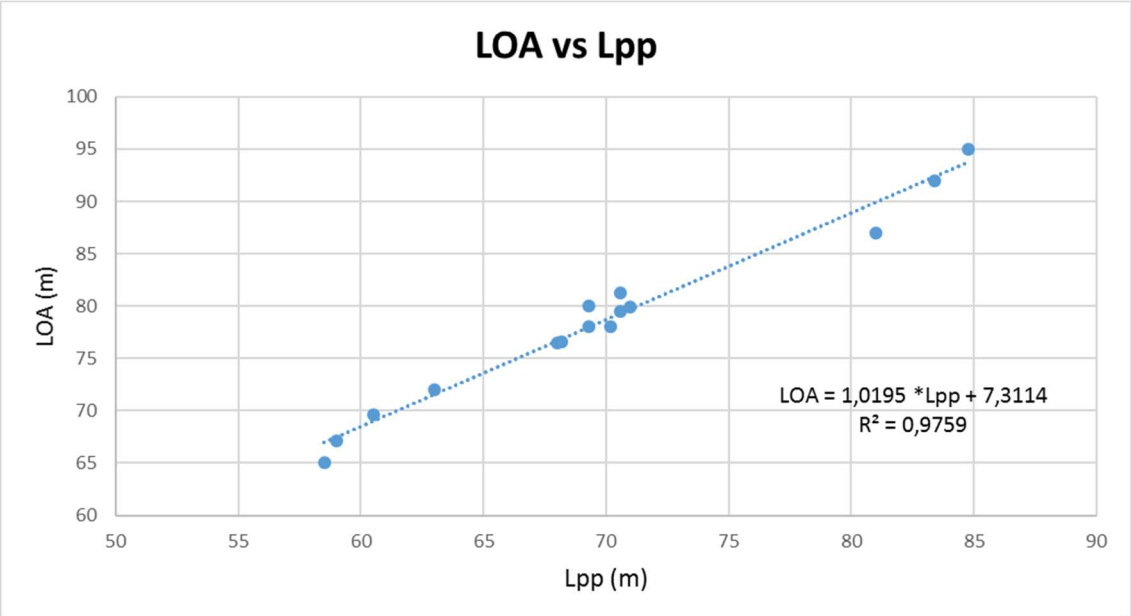
De esta última gráfica obtenemos:

$$LOA_1 = 0{,}0085 \ * \ Oil\ rec.cap + 70.005$$

Introduciendo el valor de TPM para nuestro buque:

$$LOA_1 = 80{,}21\ m$$

Ahora realizaremos una estimación de la eslora total frente a la eslora entre perpendiculares obteniendo la siguiente expresión:



$$LOA_2 = 1.0195 * Lpp + 7.3114$$

En dicha fórmula introducimos la Lpp estimada anteriormente y obtenemos:

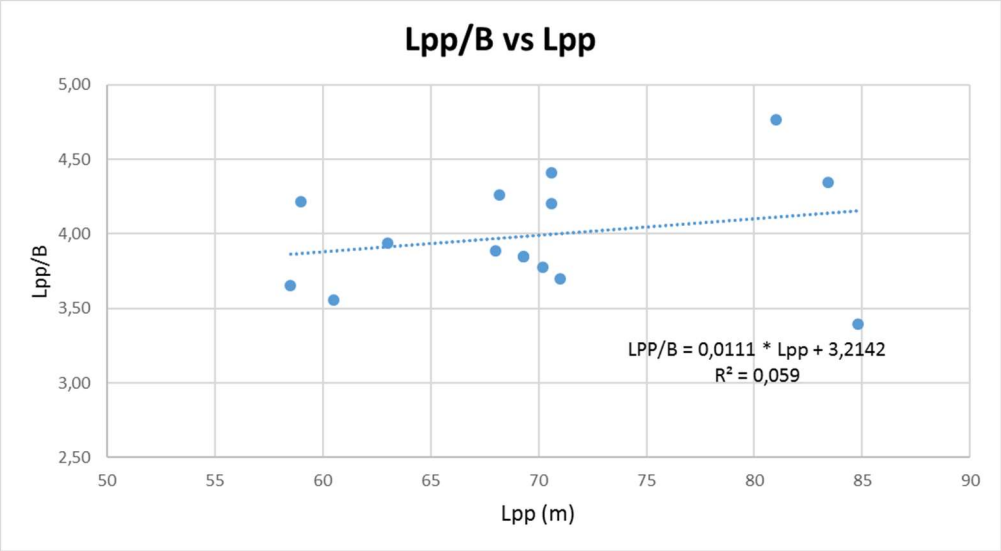
$$LOA_2 = 80{,}1\ m$$

El valor final lo obtendremos al promediar los dos valores de LOA obtenidos anteriormente, con lo que la eslora total para el buque a proyectar será de:

$$\boldsymbol{LOA = 80{,}19\ m}$$

3.1.3 Manga (B)

En dicho apartado se recoge la gráfica de Lpp/B frente a Lpp, así como la recta de regresión y su ecuación para la estimación de la Manga de nuestro buque.



De dicha gráfica obtenemos la siguiente ecuación:

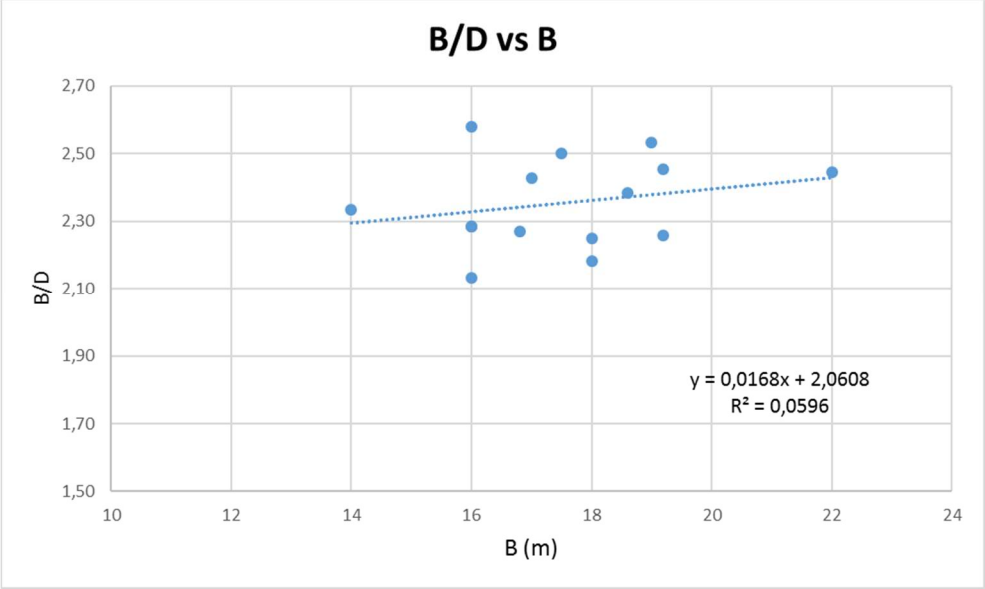
$$^{Lpp}/_{B} = 0.0111 * Lpp + 3{,}2142$$

Como la eslora entre perpendiculares tiene un valor conocido y calculado en el apartado anterior, no queda más que despejar del citado cociente el valor de la manga del buque a proyectar. Esto es:

$$\boldsymbol{B = 19{,}49\ m}$$

3.1.4 Puntal (D)

Para obtener el puntal lo realizaremos mediante dos gráficas distintas: B/D – B y Lpp – D.



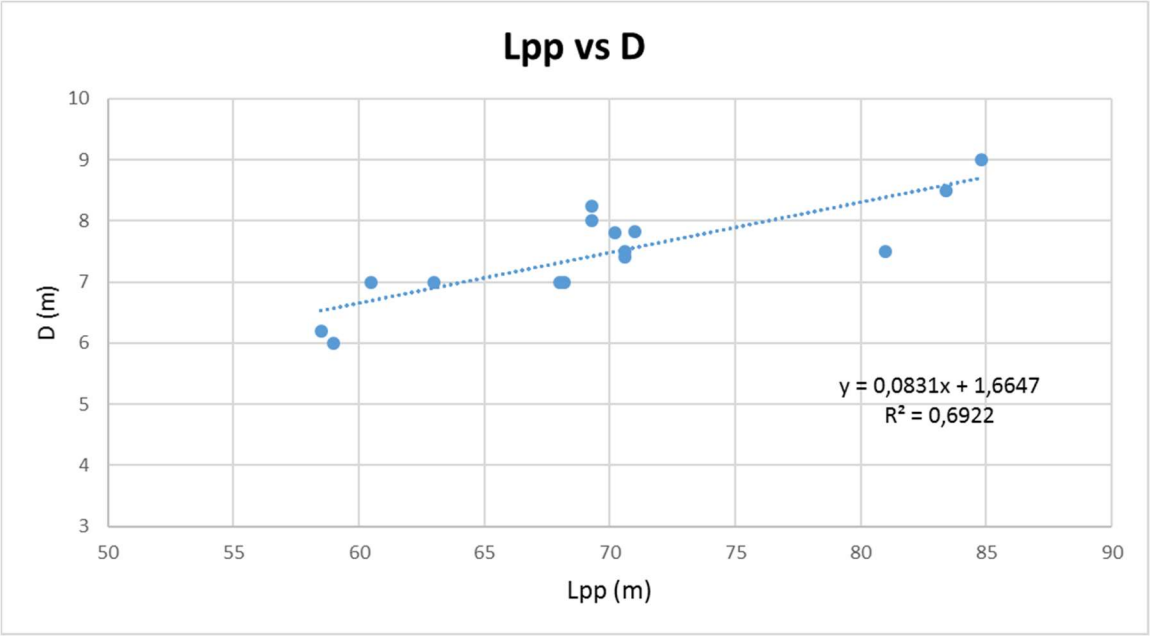
De dicha gráfica obtenemos la siguiente ecuación:

$$^{B}/_{D} = 0{,}0168 * B + 2{,}0608$$

En dicha ecuación, introduciendo el valor estimado anteriormente de la Manga, obtenemos:

$$\boldsymbol{D_1 = 8{,}16\ m}$$

La segunda gráfica que comentamos anteriormente es la siguiente,



De dicha gráfica obtenemos la siguiente ecuación:

$$D = 0.0831 * Lpp + 1{,}6647$$

Como la eslora entre perpendiculares tiene un valor conocido y calculado en el apartado anterior, no queda más que introducirlo en dicha ecuación para obtener el segundo valor de D. Esto es:

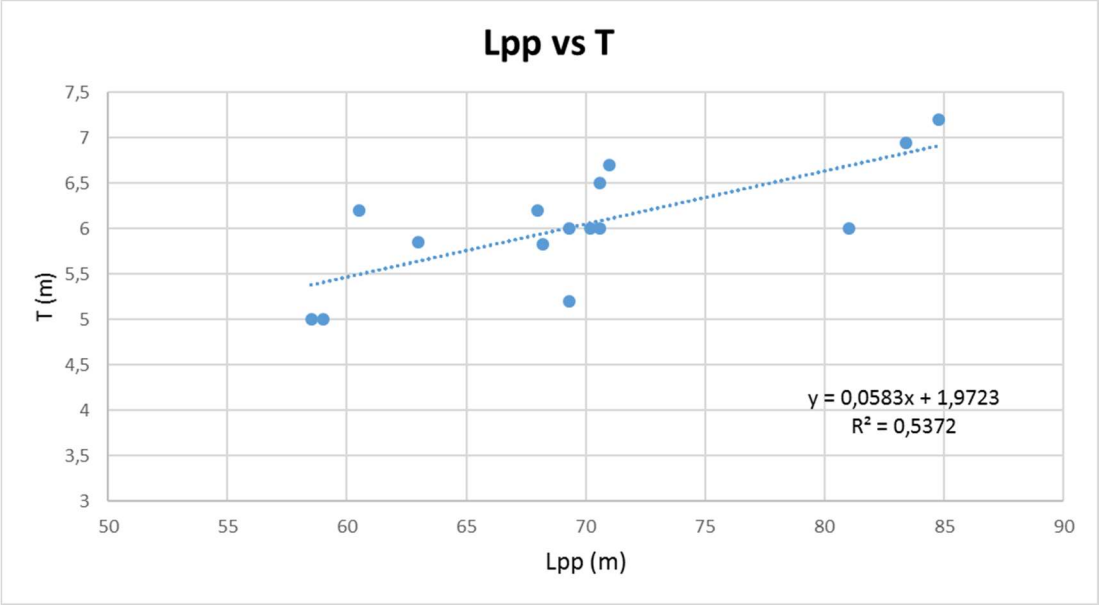
$$\boldsymbol{D_2 = 7{,}60\ m}$$

El valor final lo obtendremos al promediar los dos valores de D obtenidos anteriormente, con lo que el puntal del buque a proyectar será de:

$$\boldsymbol{D = 7{,}88\ m}$$

3.1.5 Calado

En este apartado vamos a obtener el calado mediante dos gráficas distintas: Lpp - T y Lpp – Lpp/T.



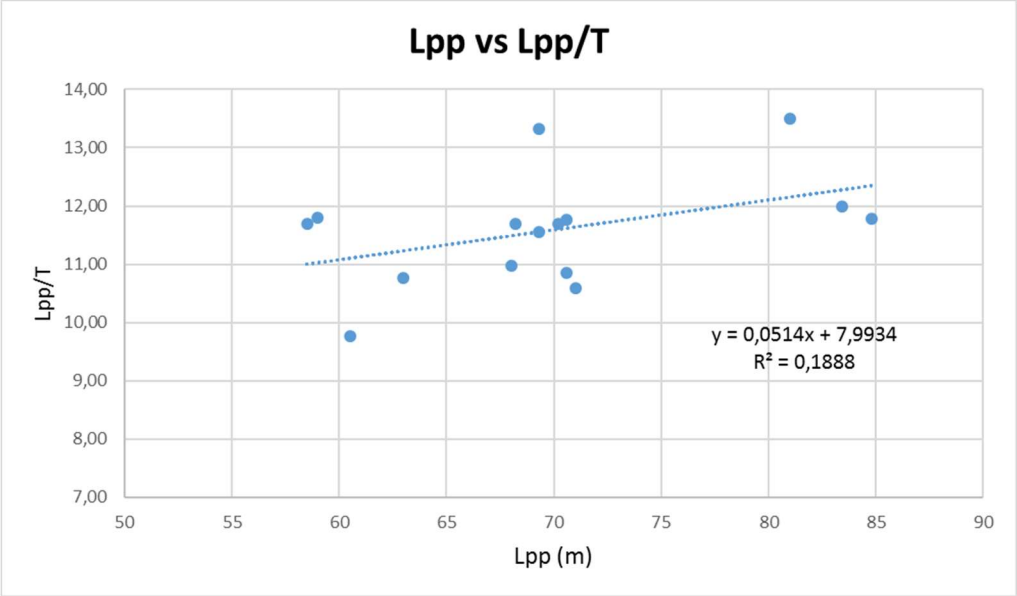
De dicha gráfica obtenemos la siguiente ecuación:

$$T_1 = 0{,}0583 * Lpp + 1{,}9723$$

Introduciendo el valor estimado anteriormente de la Eslora entre perpendiculares, obtenemos:

$$\boldsymbol{T_1 = 6{,}14\ m}$$

Y para calcular el segundo valor del calado:



De dicha gráfica obtenemos la siguiente ecuación:

$$Lpp/_T = 0{,}0514 * Lpp + 7{,}9934$$

Como la eslora entre perpendiculares tiene un valor conocido y calculado en el apartado anterior, no queda más que introducirlo en dicha ecuación para obtener el segundo valor de T. Esto es:

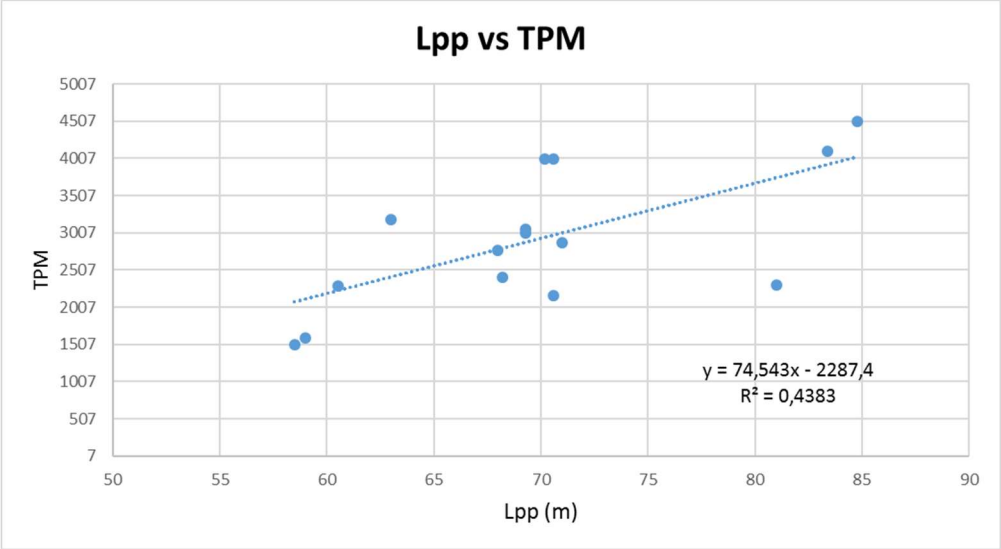
$$\boldsymbol{T_2 = 6{,}13\ m}$$

El valor final al igual que en los apartados anteriores lo obtendremos al promediar los dos valores de T obtenidos anteriormente, con lo que el puntal del buque a proyectar será de:

$$\boldsymbol{T = 6{,}13\ m}$$

3.1.6 Toneladas de peso muerto (TPM)

A continuación, estimaremos las toneladas de peso muerto del buque mediante la eslora entre perpendiculares que hemos estimado en los apartados anteriores:



De dicha gráfica obtenemos la siguiente ecuación:

$$TPM = 74{,}543 * Lpp - 228714$$

Introduciendo el valor estimado anteriormente de la Eslora entre perpendiculares, obtenemos:

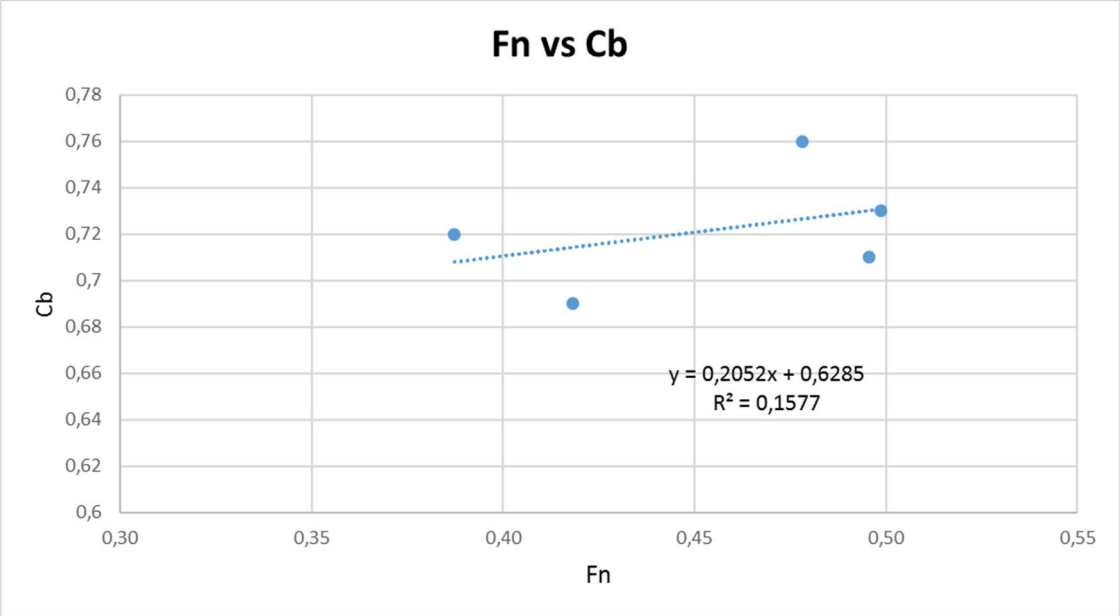
$$\boldsymbol{TPM = 3041\,T}$$

3.1.7 Coeficiente de bloque y Número de Froude

El valor del coeficiente de bloque se obtendrá a partir de una gráfica donde se representen los coeficientes de bloque de algunos buques de la base de datos de los cuales su valor es conocido y su número de Froude.

El número de Froude de dichos buques se obtendrá a partir de la siguiente fórmula:

$$Fn = \frac{V(m(s)}{\sqrt{g * Lpp}}$$



El número de Froude para nuestro proyecto es el siguiente:

$$Fn = \frac{14 * \frac{18}{3600s}}{\sqrt{9.81 * 71{,}48}} = 0.27$$

Con la ecuación de la regresión lineal, podemos obtener el valor del coeficiente de bloque:

$$\boldsymbol{Cb = 0,2052\ Fn + 0,6285 = 0.68}$$

3.1.8 Desplazamiento

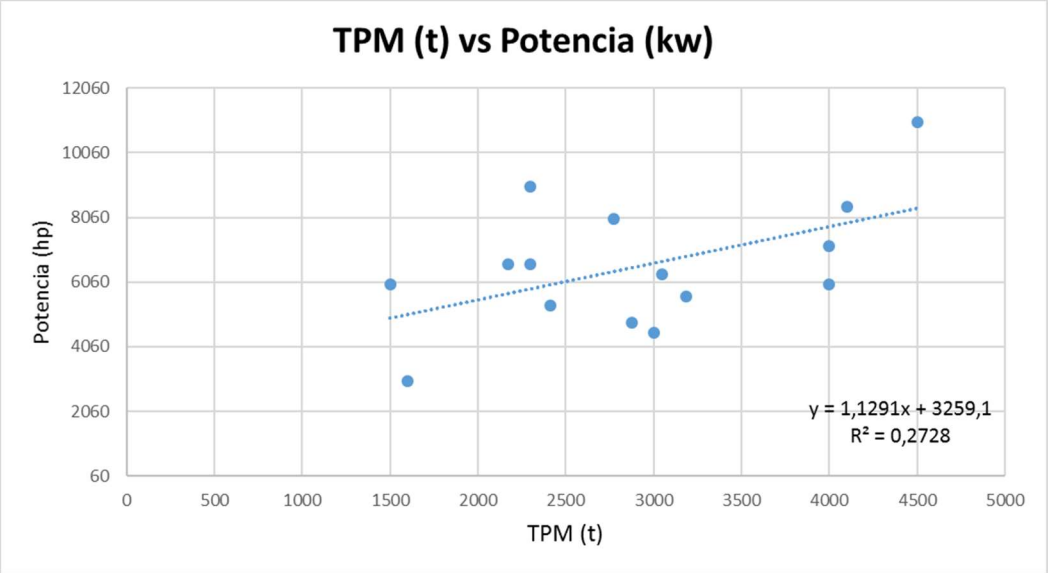
Con el valor calculado anteriormente del coeficiente de bloque podemos calcular el desplazamiento para nuestro buque mediante la siguiente expresión:

$$\Delta = Cb * \rho * Lpp * B * T$$

$$\boldsymbol{\Delta = 5993\ t}$$

3.1.9 Potencia propulsora

Como primera aproximación del cálculo de la potencia propulsora a partir de las TPM, mediante la siguiente gráfica TPM – Potencia (kw).



De dicha gráfica obtenemos la siguiente ecuación:

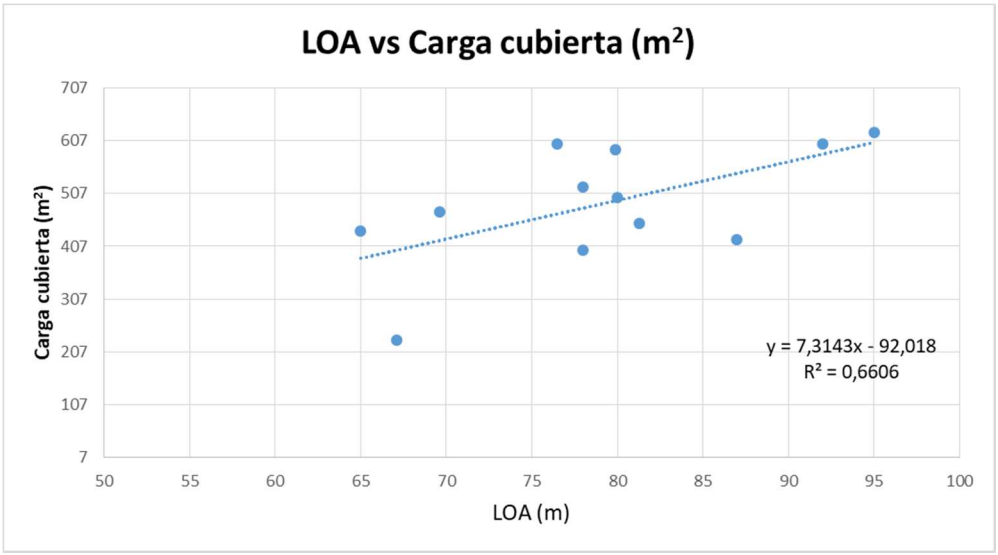
$$Potencia\ (kw) = 1{,}1291 * TPM + 3259{,}1$$

Introduciendo el valor estimado anteriormente de las Toneladas de Peso Muerto, obtenemos:

$$\boldsymbol{Potencia\ (kw) = 6692{,}2\ kw}$$

3.1.10 Superficie de carga en cubierta

Vamos a realizar una gráfica Carga en cubierta – Eslora total, para comprobar y calcular la superficie en cubierta necesaria. En las RPA de nuestro proyecto se especifica que la cubierta de carga debe cumplir con 400 m^2.



De esta gráfica obtenemos la siguiente ecuación:

$$Superficie\ en\ cubierta\ (m^2) = 7.3143 * LOA - 92.018$$

$$\boldsymbol{Superficie\ en\ cubierta\ (m^2) = 494,53\ m^2}$$

Además de esta regresión, crearemos una restricción a partir de la superficie de la cubierta obtenida, de forma que, a los buques de la base de datos de los que tengamos las dimensiones de la cubierta, se le calculará el porcentaje de ancho de cubierta respecto a la manga total del buque, para obtener la distancia que se deja de margen.

Buque	B	Ancho cubierta (m)	Ancho/B
Damen8116	16	11	69%
Damen OSRV 1050	14	6	43%
ABS +A1	18	9,5	53%
VS 4612 AHTS	17	14	82%
ASSO Trenta	16	13	81%
MEDIA			65,6%

Se hará lo análogo para las dimensiones longitudinales. A los buques anteriores se calculará el porcentaje de largo de cubierta respecto a la eslora entre perpendiculares, y a estos porcentajes se le hará la media.

Buque	LOA	Largo cubierta (m)	Largo/LOA
Damen8116	81,3	40,9	50%
Damen OSRV 1050	67,1	38,6	58%
ABS +A1	78	54,7	70%
VS 4612 AHTS	69,6	33,7	48%
ASSO Trenta	76,6	52,92	69%
MEDIA			59%

Con los datos de media obtenidos, la restricción será la siguiente:

$$Superficie\ en\ cubierta\ (m^2) = [B(m) * 65{,}6\%] * [LOA(m) * 59\%] \geq 494{,}53\ m^2$$

$$Superficie\ en\ cubierta\ (m^2) = [13{,}05] * [39{,}31] \geq 512{,}3\ m^2$$

Cumpliendo con estas restricciones, tomaremos como superficie de carga en cubierta la anteriormente calculada:

$$\boldsymbol{Superficie\ en\ cubierta\ (m^2) = 512,3\ m^2}$$

3.1.11 Tabla resumen

DIMENSIONES PRINCIPALES OBTENIDAS	
Eslora total (LOA)	80,19
Eslora entre perpendiculares (Lpp)	71,48
Manga(B)	19,49
Puntal (D)	7,88
Calado (T)	6,13
TPM	3041
Cb	0,68
Superficie en cubierta (m^2)	512,3
Δ	5993,29
V	14,00
Potencia (kw)	6692,20

Tabla 4 - Tabla resumen dimensiones obtenidas. Fuente: Propia.

3.2 Comparación Relaciones adimensionales de referencia

En dicho apartado se comparan los coeficientes adimensionales obtenidos con los resultados del estudio anterior con los valores normales de las relaciones adimensionales y del número de Froude que se indican en la referencia bibliográfica del *"Proyecto básico del buque mercante"* [1], en el capítulo 2.11, Buques de Servicio, para este tipo de buques son:

L/B	B/D	B/T	L/D	T/D	Fr
2,5 - 4,7	1,9 - 2,5	2,1 - 2,8	5,0 - 9,5	0,78 - 0,91	0,34 - 0,44

Y por otra parte los coeficientes obtenidos en las estimaciones realizadas en los apartados anteriores son los siguientes:

L/B	B/D	B/T	L/D	T/D	Fr
3,7	2,5	3,2	8,8	0,8	0,31

Los dos únicos valores que no están dentro del rango se tratan de B/T y el número de Froude, pero tal y como vemos son desviaciones mínimas. Con lo que podemos concluir que, debido al carácter preliminar de nuestro estudio, los valores obtenidos pueden ser considerados aceptables para proseguir trabajando en el buque a proyectar.

4 CÁLCULO DE LA CIFRA DE MÉRITO

El objetivo del proyectista en el dimensionamiento de un buque debe ser determinar las características principales del proyecto, que satisfagan los requisitos del armador. Como no existe una solución única del problema, habrá varios conjuntos de dimensiones y coeficientes que satisfagan los requisitos anteriores.

Elegir uno de estos conjuntos como más idóneo es el objetivo de la función de mérito. Entre las funciones de mérito utilizadas más frecuentemente podemos citar las siguientes:

- Coste de construcción mínimo
- Inversión total mínima
- Coste de ciclo de vida mínimo
- Flete requerido mínimo
- Tasa de recuperación de capital máxima

En nuestro caso, estudiaremos la función de mérito asociada al coste de construcción mínimo (astillero).

La expresión que utilizaremos del coste de construcción es la siguiente:

$$CC = CM_g + CE + CM_0 + VA$$

Donde:

CC = Coste de Construcción.

CM_g = Coste Materiales a Granel.

CE = Coste de Equipos y su Montaje.

CM_0 = Coste Mano de Obra a Granel.

VA = Costes Varios (Sociedades de clasificación, ensayos en canal…)

4.1 Coste de materiales a granel (CM_g)

$$CM_g = cmg * PS = ccs * cas * cem * ps * PS$$

Donde:

cmg = coeficiente de costo de material a granel

ccs = coeficiente ponderado de chapas y acero de distintas calidades = 1,30

cas = Coeficiente aprovechamiento material = 1.10

cem = %acero no estructural y tuberías = 1,10

ps = precio unitario acero = 470 €/ton

PS = Peso Acero

El peso del acero lo obtendremos mediante la fórmula empírica mostrada a continuación, la cual es en función de las dimensiones principales estimadas en los apartados anteriores:

$$PS = \left(\frac{L}{10}\right)^{1.376} * \left(\frac{B * D}{100}\right)^{0.7449} * (0.0542 - 0.0017 * C_b) * 1000$$

Con las dimensiones principales estimadas anteriormente obtenemos:

$$PS = \left(\frac{71{,}48}{10}\right)^{1.376} * \left(\frac{19.49 * 7.88}{100}\right)^{0.7449} * (0.0542 - 0.0017 * 0.69) * 1000 = \mathbf{1095{,}42\ t}$$

Una vez estimado el peso del acero podemos calcular el coste de materiales a granel:

$$CM_g = ccs * cas * cem * ps * PS = 1.3 * 1.1 * 1.1 * 470 * 1095{,}42 = \mathbf{809.855{,}78}\ €$$

4.2 Coste mano de obra a granel (CM_0)

$$CM_0 = chm * csh * PS$$

Donde:

chm = coste horario medio del astillero = tomaremos 30€/h

csh = coeficiente de horas por unidad de peso = tomamos el siguiente valor 60 h/ton

PS = pesos de acero = 1170.16 t

$$CM_0 = 30 * 60 * 1095{,}42 = \mathbf{1.971.378}\ €$$

4.3 Coste de equipos y su montaje (CE)

$$CE = Coste\ equipos + Coste\ montaje = CE_c + CE_p + CH_f + CE_r$$

Donde:

CE_c = Coste equipos c/d. Dicho valor no lo tendremos en cuenta al no tener el buque medios de c/d significativos.

CE_p = Coste equipos propulsión, aux y su montaje

$$CE_p = cep * BP$$

cep = coeficiente de coste por unidad de potencia = tomaremos 350 €/kw

- BP = Potencia propulsora = 6692 hp

$$CE_p = 350 * 6692 = \mathbf{2.345.269}\ €$$

CH_f = Coste de habilitación y su montaje

$$CH_f = chf * nch * NT$$

chf = coeficiente de coste por tripulante = tomaremos 3500 €/trip

nch = coeficiente de nivel de calidad de la habilitación = 1,1

NT número de tripulantes = 25

$$CH_f = 3500 * 1.1 * 25 = \mathbf{96.250}\ €$$

CE_r = Coste del equipo restante

$$CE_r = ccs * ps * PEr$$

Per = peso equipo restante = 0.045 * $L^{1.3}$ * $B^{0.8}$ * $D^{0.3}$ = 231,49 t

ccs = 1.3

ps = precio unitario del acero de referencia = 470 €/t

$$CE_r = 1.3 * 470 * 231{,}49 = \mathbf{141.438{,}35}\ €$$

4.4 Costes Varios (VA)

Los costes varios suelen representar entre un 5% y un 10% del coste de construcción total, de tal forma que tomaremos la siguiente fórmula para el cálculo:

$$VA = 0{,}1 * CC = 0{,}1 * (CM_g + CM_0 + CE) = \mathbf{536.157{,}12}\ €$$

4.5 Coste de Construcción (CC)

Recopilando todo lo calculado anteriormente y usando la fórmula del coste de construcción obtenemos:

$$CC = CM_g + CE + CM_0 + VA = 809.855.78 + 2.342.269 + 1.974.758 + 536.157{,}12$$

$$\boldsymbol{CC = 5.897.728{,}30}\ €$$

4.6 Desarrollo de Iteraciones

A continuación, iniciaremos el proceso de cálculo de la cifra de mérito apoyándonos en las expresiones y dimensiones obtenidas anteriormente. Mediante las iteraciones, obtendremos diferentes combinaciones de dimensiones y eligiremos las que minimicen el coste de construcción, que serán las óptimas.

4.6.1 Variaciones de eslora, manga y Cb

Tomaremos variaciones de la eslora a intervalos de 0,5 metros, entre un 10% superior e inferior a la inicial. Para cada valor de eslora calculado, tomaremos a su vez varios valores para la manga, calculados a intervalos de 0,5 metros entre un 10% por encima y por debajo

de la inicial. Y también realizaremos variaciones del coeficiente de bloque entre un 3% superior e inferior.

$$67{,}27 < L_0 < 82{,}21$$

$$17{,}99 < B_0 < 21{,}44$$

$$0{,}67 < Cb < 0{,}71$$

Para calcular los valores de calado y puntal, procederemos de la siguiente manera:

$$D = \frac{L_0 * B_0 * D_0}{L * B}$$

$$T = \frac{L_0 * B_0 * T_0}{L * B}$$

*El subíndice 0 representa los valores iniciales y la ausencia de dicho subíndice representa las parejas de cada iteración.

Para cada valor de L, B y Cb, calcularemos el resto de parámetros del buque. Para obtener dichos valores, se han realizado un total de 999 iteraciones. Una vez calculadas las iteraciones comprobaremos los resultados con un estudio similar realizado por Luis Pérez Rojas en su libro “Sobre los Buques de suministro” [1]. Dichos rangos de validez son los siguientes:

$$4{,}0 < \frac{L}{B} < 4{,}5$$

$$2{,}36 < \frac{B}{D} < 2{,}6$$

$$2{,}6 < \frac{B}{T} < 3{,}1$$

$$0{,}80 < \frac{T}{D} < 0{,}88$$

A continuación, explicamos el cálculo de cada una de las columnas realizadas en la tabla de iteraciones y con el cual se ha realizado el cálculo de cada uno de los parámetros:

Columna 1. Lpp. Eslora entre perpendiculares, fijada para cada alternativa.

Columna 2. B. Manga, fijada para cada alternativa.

Columna 3. D. Puntal. Hemos considerado, como mencionamos anteriormente que:

$$D = \frac{L_0 * B_0 * D_0}{L * B}$$

Columna 4. T. Calado. Hemos considerado, como mencionamos anteriormente que:

$$T = \frac{L_0 * B_0 * T_0}{L * B}$$

Columna 5. Cb. Coeficiente de bloque, fijado para cada alternativa.

Columna 6. Lpp/B.

$$4{,}0 < \frac{L}{B} < 4{,}5$$

Columna 7. B/D.

$$2{,}36 < \frac{B}{D} < 2{,}6$$

Columna 8. B/T.

$$2{,}6 < \frac{B}{T} < 3{,}1$$

Columna 9. T/D.

$$0{,}80 < \frac{T}{D} < 0{,}88$$

Columna 10. Verificación de restricciones. Esta columna comprueba que se cumplan las restricciones mencionadas anteriormente.

Columna 11. Fn. Número de Froude.

$$Fn = \frac{V(m(s)}{\sqrt{g * Lpp}}$$

Columna 12. C_M. Coeficiente de la maestra.

$$C_M = 0{,}526 + \frac{0{,}49}{Cb} - \frac{0{,}165}{Cb^2}$$

Columna 13. C_P. Coeficiente prismático.

$$C_P = \frac{C_b}{C_M}$$

Columna 14. C_F. Coeficiente de la flotación.

$$C_F = 0{,}45 * Cb + 0{,}56$$

Columna 15. Xcc. Posición longitudinal del centro de carena.

$$X_{CC} = (17{,}5 * C_P - 12{,}5) * L/100$$

Columna 16. PS. Peso de aceros del buque.

$$PS = \left(\frac{L}{10}\right)^{1.376} * \left(\frac{B * D}{100}\right)^{0.7449} * (0.0542 - 0.0017 * C_b) * 1000$$

Columna 17. CMg. Coste de materiales a granel.

$$CM_g = cmg * \ PS = ccs * cas * cem * ps * PS$$

Columna 18. CM0. Coste de mano de obra a granel.

$$CM_0 = chm * csh * PS$$

Columna 19. CEp. Coste equipos propulsión, aux y su montaje.

$$CE_p = cep * BP$$

Columna 20. CHf. Coste de habilitación y su montaje.

$$CH_f = chf * nch * NT$$

Columna 21. Per. Peso equipo restante .

$$Per = 0.045 * L^{1.3} * B^{0.8} * D^{0.3}$$

Columna 22. CEr. Coste del equipo restante.

$$CE_r = ccs * ps * PEr$$

Columna 23. CE. Coste de equipos y su montaje.

$$CE = CE_c + CE_p + CH_f + CE_r$$

Columna 24. CC0. Coste de construcción sin costes variables.

$$CC = CM_g + CE + CM_0$$

Columna 25. VA. Costes variables.

$$VA = 0{,}1 * CC = 0{,}1 * \left(CM_g + CM_0 + CE\right)$$

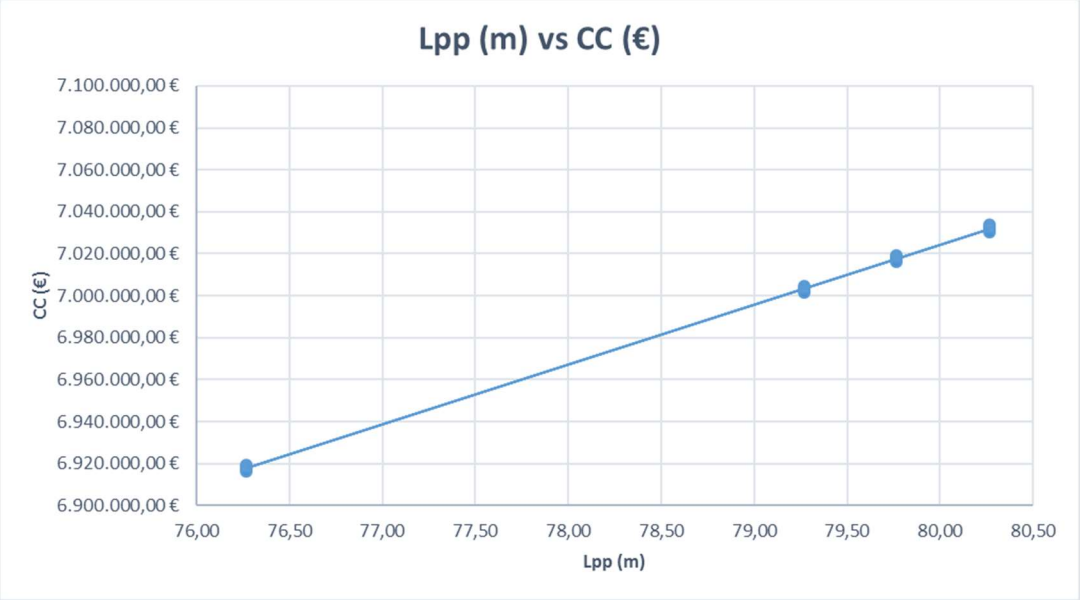
Columna 26. CC. Coste de Construcción.

$$CC = CM_g + CE + CM_0 + VA$$

4.7 Alternativa final.

Una vez construida toda la tabla y eligiendo solo las iteraciones que cumplen las restricciones, se reduce a un número de 16 lo que supone un 1,5% de las alternativas iniciales (999).

El siguiente gráfico se ha realizado con el rango de opciones que cumplen las restricciones y en el cual podemos observar como el coste de construcción del buque va aumentando conforme aumenta el valor de la eslora del buque.



Debido a que la función de mérito a estudiar en el presente proyecto está relacionada con el costo de construcción mínimo tal y como hemos mencionado anteriormente, la alternativa final escogida será la que tenga el menor CC de entre las 16 que cumplen las restricciones.

Lpp	B	D	T	Cb	Lpp/B	B/D	B/T	T/D	¿Cumple?	Fr	Cm	Cp	Cf	Xcc	PS	CMg	CM0	CEp	CHf	Per	CEr	CE	CC0	VA	CC
76,27	19,044	7,908	6,152	0,68	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,77	0,87	0,69	1180,22	872.549 €	2.124.398 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.290.293 €	629.029 €	6.919.323 €
76,27	19,044	7,908	6,152	0,69	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,78	0,87	0,84	1179,84	872.270 €	2.123.718 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.289.335 €	628.933 €	6.918.268 €
76,27	19,044	7,908	6,152	0,70	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,79	0,88	1,00	1179,47	871.991 €	2.123.039 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.288.376 €	628.838 €	6.917.213 €
76,27	**19,044**	**7,908**	**6,152**	**0,71**	**4,005**	**2,408**	**3,096**	**0,801**	**SI**	**2,46**	**0,89**	**0,80**	**0,88**	**1,15**	**1179,09**	**871.712 €**	**2.122.359 €**	**3.045.914 €**	**96.250 €**	**247,43**	**151.182 €**	**3.293.346 €**	**6.287.417 €**	**628.742 €**	**6.916.159 €**
79,27	18,544	7,814	6,079	0,68	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,77	0,87	0,72	1209,31	894.056 €	2.176.760 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.368.032 €	636.803 €	7.004.836 €
79,27	18,544	7,814	6,079	0,69	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,78	0,87	0,88	1208,92	893.770 €	2.176.064 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.367.050 €	636.705 €	7.003.755 €
79,27	18,544	7,814	6,079	0,70	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,79	0,88	1,04	1208,54	893.484 €	2.175.367 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.366.068 €	636.607 €	7.002.675 €
79,27	18,544	7,814	6,079	0,71	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,80	0,88	1,20	1208,15	893.198 €	2.174.671 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.365.085 €	636.509 €	7.001.594 €
79,77	18,544	7,765	6,040	0,68	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,77	0,87	0,72	1214,12	897.611 €	2.185.416 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.381.221 €	638.122 €	7.019.343 €
79,77	18,544	7,765	6,040	0,69	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,78	0,87	0,88	1213,73	897.324 €	2.184.716 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.380.235 €	638.023 €	7.018.258 €
79,77	18,544	7,765	6,040	0,70	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,79	0,88	1,04	1213,34	897.037 €	2.184.017 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.379.248 €	637.925 €	7.017.173 €
79,77	18,544	7,765	6,040	0,71	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,80	0,88	1,20	1212,95	896.749 €	2.183.318 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.378.262 €	637.826 €	7.016.088 €
80,27	18,544	7,716	6,003	0,68	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,77	0,87	0,73	1218,92	901.158 €	2.194.051 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.394.381 €	639.438 €	7.033.819 €
80,27	18,544	7,716	6,003	0,69	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,78	0,87	0,89	1218,53	900.869 €	2.193.349 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.393.391 €	639.339 €	7.032.730 €
80,27	18,544	7,716	6,003	0,70	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,79	0,88	1,05	1218,14	900.581 €	2.192.647 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.392.401 €	639.240 €	7.031.641 €
80,27	18,544	7,716	6,003	0,71	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,80	0,88	1,21	1217,75	900.293 €	2.191.945 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.391.411 €	639.141 €	7.030.552 €

ALTERNATIVA FINAL. DIMENSIONES PRINCIPALES DEL BUQUE	
L (m)	85,06
Lpp (m)	76,266
B (m)	19,044
D (m)	7,908
T(m)	6,152
Δ (t)	6516,21
TPM (t)	3397,70
C_b	0,71
C_M	0,89
C_P	0,80
C_F	0,88
V (kn)	14
Superficie de cubierta (m^2)	400,00

Tabla 5 - Tabla resumen de dimensiones principales. Fuente: Propia.

La eslora total (L) se obtiene a partir de la eslora entre perpendiculares (Lpp), utilizando la relación obtenida mediante la gráfica Lpp (m) – L (m) de la base de datos.

$$L = 1.0195 * Lpp + 7.3114$$

El peso muerto (TPM) se obtiene a partir de la eslora entre perpendiculares (Lpp), utilizando la relación obtenida mediante la gráfica Lpp (m) – DWT (t) de la base de datos.

$$TPM = 74{,}543 * Lpp - 2287{,}4$$

5 ESTIMACIÓN DE LA POTENCIA PROPULSORA

Para realizar la estimación de la potencia propulsora utilizaremos como herramienta el programa NavCad de ayuda.

En esta fase del proyecto, aun no conocemos algunos datos concretos para la realización de dicho cálculo, por lo que en para algunos datos se trabajará con estimaciones recogidas de otros buques.

Como no conocemos aún el valor de la eslora en la flotación, que es uno de los datos principales que nos pide este programa, vamos a tomar como valor el correspondiente a un 5% menos que la eslora elegida en los procesos anteriores.

Se muestra la gráfica obtenida de este cálculo preliminar de la potencia propulsora.

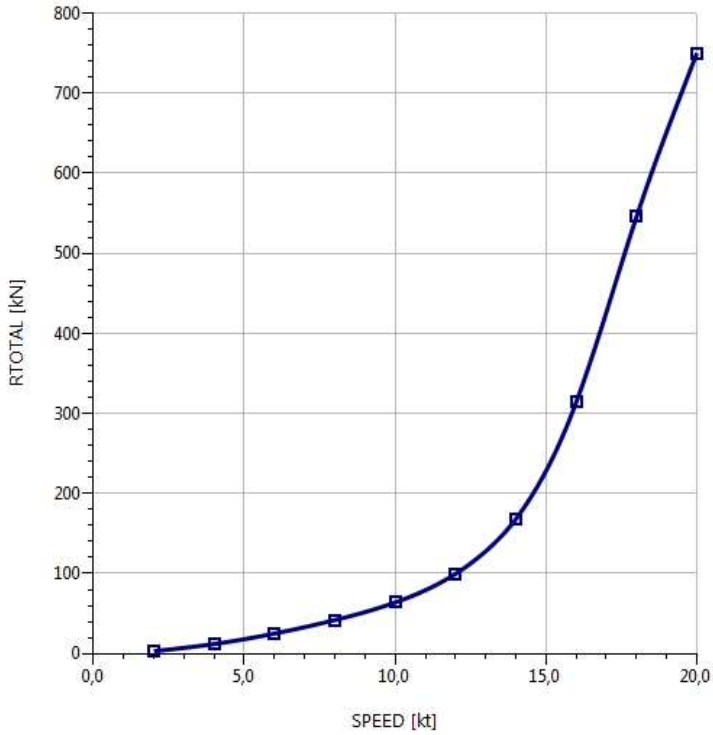


Ilustración 8. Rtotal vs Speed.
Fuente: Output NavCad software

Además de esto, del software NavCad obtenemos los resultados siguientes al calcular la potencia:

Resistance

17 abr 2018 05:28
HydroComp NavCad 2014

Project ID: PSV preliminar C1
Description:
File name: PSV_Diego Bellido C1.hcnc

Analysis parameters

Vessel drag		ITTC-78 (CT)	Added drag		
Technique:	[Calc]	Prediction	Appendage:	[Calc]	Holtrop (Component)
Prediction:		Holtrop	Wind:	[Off]	
Reference ship:			Seas:	[Off]	
Model LWL:			Shallow/channel:	[Off]	
Expansion:		Custom	Towed:	[Off]	
Friction line:		ITTC-57	Margin:	[Off]	
Hull form factor:	[On]	1,230	**Water properties**		
Speed corr:	[On]		Water type:		Salt
Spray drag corr:	[Off]		Density:		1026,00 kg/m3
Corr allowance:		0,000000	Viscosity:		1,18920e-6 m2/s
Roughness [mm]:	[Off]				

Prediction method check [Holtrop]

Parameters	FN [design]	CP	LWL/BWL	BWL/T	Lambda
Value	0,25	0,66	4,45	3,10	0,83
Range	0,06--0,66	0,55--0,85	3,90--14,90	2,10--4,00	0,01--1,06

Prediction results

	SPEED COEFS		ITTC-78 COEFS						
SPEED [kt]	FN	FV	RN	CF	[CTLT/CF]	CR	dCF	CA	CT
2,00	0,036	0,076	7,32e7	0,002181	1,230	0,001015	0,000000	0,000000	0,003697
4,00	0,071	0,153	1,46e8	0,001973	1,230	0,001250	0,000000	0,000000	0,003676
6,00	0,107	0,229	2,20e8	0,001865	1,230	0,001122	0,000000	0,000000	0,003415
8,00	0,143	0,305	2,93e8	0,001794	1,228	0,001005	0,000000	0,000000	0,003207
10,00	0,179	0,382	3,66e8	0,001741	1,224	0,000998	0,000000	0,000000	0,003130
12,00	0,214	0,458	4,39e8	0,001700	1,216	0,001323	0,000000	0,000000	0,003390
← 14,00 →	0,250	0,534	5,12e8	0,001666	1,202	0,002199	0,000000	0,000000	0,004202
16,00	0,286	0,611	5,86e8	0,001638	1,182	0,004076	0,000000	0,000000	0,006011
18,00	0,321	0,687	6,59e8	0,001613	1,155	0,006389	0,000000	0,000000	0,008253
20,00	0,357	0,763	7,32e8	0,001592	1,127	0,007390	0,000000	0,000000	0,009184

	RESISTANCE							
SPEED [kt]	RBARE [kN]	RAPP [kN]	RWIND [kN]	RSEAS [kN]	RCHAN [kN]	RTOWED [kN]	RMARGIN [kN]	RTOTAL [kN]
2,00	3,02	0,00	0,00	0,00	0,00	0,00	0,00	3,02
4,00	12,01	0,00	0,00	0,00	0,00	0,00	0,00	12,01
6,00	25,10	0,00	0,00	0,00	0,00	0,00	0,00	25,10
8,00	41,92	0,00	0,00	0,00	0,00	0,00	0,00	41,92
10,00	63,91	0,00	0,00	0,00	0,00	0,00	0,00	63,91
12,00	99,69	0,00	0,00	0,00	0,00	0,00	0,00	99,69
← 14,00 →	168,16	0,00	0,00	0,00	0,00	0,00	0,00	168,16
16,00	314,20	0,00	0,00	0,00	0,00	0,00	0,00	314,20
18,00	546,01	0,00	0,00	0,00	0,00	0,00	0,00	546,01
20,00	750,10	0,00	0,00	0,00	0,00	0,00	0,00	750,10

	EFFECTIVE POWER		OTHER		
SPEED [kt]	PEBARE [kW]	PETOTAL [kW]	CTLR	CTLT	RBARE/W
2,00	3,1	3,1	0,01017	0,03704	0,00005
4,00	24,7	24,7	0,01252	0,03683	0,00019
6,00	77,5	77,5	0,01124	0,03421	0,00039
8,00	172,5	172,5	0,01006	0,03213	0,00066
10,00	328,8	328,8	0,01000	0,03135	0,00100
12,00	615,4	615,4	0,01325	0,03396	0,00156
← 14,00 →	1211,1	1211,1	0,02203	0,04209	0,00263
16,00	2586,2	2586,2	0,04083	0,06021	0,00492
18,00	5056,0	5056,0	0,06400	0,08267	0,00854
20,00	7717,7	7717,7	0,07403	0,09200	0,01174

Resistance

17 abr 2018 05:28
HydroComp NavCad 2014

Project ID: PSV preliminar C1
Description:
File name: PSV_Diego Bellido C1.hcnc

Hull data

General			Planing		
Configuration:		Monohull	*Proj chine length:*		*0,000 m*
Chine type:		Round/multiple	*Proj bottom area:*		*0,0 m2*
Length on WL:		84,600 m	*LCG fwd TR:*	*[XCG/LP 0,000]*	*0,000 m*
Max beam on WL:	[LWL/BWL 4,453]	19,000 m	*VCG below WL:*		*0,000 m*
Max molded draft:	[BWL/T 3,102]	6,125 m	*Aft station (fwd TR):*		*0,000 m*
Displacement:	[CB 0,645]	6516,00 t	*Deadrise:*		*0,00 deg*
Wetted surface:	[CS 2,052]	1504,0 m2	*Chine beam:*		*0,000 m*
ITTC-78 (CT)			*Chine ht below WL:*		*0,000 m*
LCB fwd TR:	[XCB/LWL 0,440]	37,224 m	*Fwd station (fwd TR):*		*0,000 m*
LCF fwd TR:	[XCF/LWL 0,644]	54,496 m	*Deadrise:*		*0,00 deg*
Max section area:	[CX 0,970]	112,9 m2	*Chine beam:*		*0,000 m*
Waterplane area:	[CWP 0,748]	1202,1 m2	*Chine ht below WL:*		*0,000 m*
Bulb section area:		7,5 m2	*Propulsor type:*		*Horizontal tow*
Bulb ctr below WL:		0,000 m	*Max prop diameter:*		*0,0 mm*
Bulb nose fwd TR:		81,200 m	*Shaft angle to WL:*		*10,00 deg*
Imm transom area:	[ATR/AX 0,076]	8,6 m2	*Position fwd TR:*		*0,000 m*
Transom beam WL:	[BTR/BWL 0,921]	17,500 m	*Position below WL:*		*0,000 m*
Transom immersion:	[TTR/T 0,000]	0,000 m	*Transom lift device:*		*Flap*
Half entrance angle:		25,34 deg	*Device count:*		*0*
Bow shape factor:	[AVG flow]	0,0	*Span:*		*0,000 m*
Stern shape factor:	[AVG flow]	0,0	*Chord length:*		*0,000 m*
			Deflection angle:		*0,00 deg*
			Tow point fwd TR:		*0,000 m*
			Tow point below WL:		*0,000 m*

Para la velocidad de diseño de nuestro buque, 14 Kn, se parte de una resistencia total de remolque de la carena de 168,16 Kn. Este será nuestro dato de partida para poder calcular la potencia que deberá proporcionarnos el motor o los motores para propulsar el buque a la velocidad de diseño.

$$Pot\ (kW) = \frac{R * 1{,}15 * v * 0.5144}{0.85 * \mu_{mec} * \mu_{pro}} = \frac{168.16 * 1{,}15 * 14 * 0.5144}{0.85 * 0.97 * 0.60} = 2.815{,}20\ Kw$$

Por otra parte, también desde el programa NavCad hemos realizado el cálculo de la potencia propulsora necesaria obteniendo los siguientes resultados:

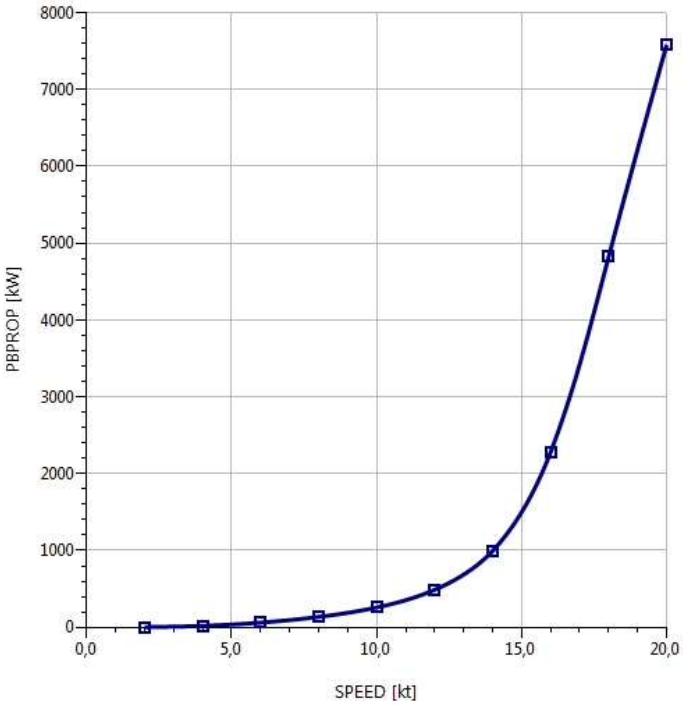


Ilustración 9. PBPro vs Speed.
Fuente: Output NavCad software

Propulsion

17 abr 2018 07:35
HydroComp NavCad 2014

Project ID: PSV preliminar C1
Description:
File name: PSV_Diego Bellido C1.hcnc

Analysis parameters

Hull-propulsor interaction		System analysis	
Technique:	[Calc] Prediction	Cavitation criteria:	10% cav line
Prediction:	Holtrop	Analysis type:	Free run
Reference ship:		CPP method:	
Max prop diam:	2500,0 mm	Engine RPM	
Corrections		Mass multiplier:	
Viscous scale corr:	[On] Standard	RPM constraint:	
Rudder location:	Behind propeller	Limit [RPM/s]:	
Friction line:	ITTC-57	**Water properties**	
Hull form factor:	1,298	Water type:	Salt
Corr allowance:	ITTC-78 (v2008)	Density:	1026,00 kg/m3
Roughness [mm]:	[Off] 0,00	Viscosity:	1,18920e-6 m2/s
Ducted prop corr:	[Off]		
Tunnel stern corr:	[Off]		
Effective diam:			
Recess depth:			

Prediction method check [Holtrop]

Parameters	FN [design]	CP	LWL/BWL	BWL/T
Value	0,25	0,66	4,45	3,10
Range	0,06~0,80	0,55~0,85	3,90~14,90	2,10~4,00

Prediction results [System]

	HULL-PROPULSOR				ENGINE			
SPEED [kt]	PETOTAL [kW]	WFT	THD	EFFR	RPMENG [RPM]	PBPROP [kW]	FUEL [L/h]	LOADENG [%]
2,00	3,1	0,1280	0,1347	0,9992	30	2,5	---	0,0
4,00	24,7	0,1271	0,1347	0,9992	60	19,8	---	0,0
6,00	77,5	0,1262	0,1347	0,9992	88	61,6	---	0,0
8,00	172,5	0,1256	0,1347	0,9992	116	136,0	---	0,0
10,00	328,8	0,1252	0,1347	0,9992	144	258,5	---	0,0
12,00	615,4	0,1248	0,1347	0,9992	177	489,2	---	0,0
+ 14,00 +	1211,2	0,1246	0,1347	0,9992	218	995,4	---	0,0
16,00	2586,2	0,1243	0,1347	0,9992	277	2282,3	---	0,0
18,00	5056,0	0,1241	0,1347	0,9992	345	4823,9	---	0,0
20,00	7717,7	0,1239	0,1347	0,9992	397	7581,8	---	0,0

	POWER DELIVERY							
SPEED [kt]	RPMPROP [RPM]	QPROP [kN-m]	QENG [kN-m]	PDPROP [kW]	PSPROP [kW]	PSTOTAL [kW]	PBTOTAL [kW]	TRANSP
2,00	30	0,75	0,75	2,4	2,4	4,8	5,0	---
4,00	60	3,00	3,00	18,9	19,2	38,5	39,7	---
6,00	88	6,31	6,31	58,5	59,7	119,5	123,2	---
8,00	116	10,62	10,62	129,3	131,9	263,9	272,0	966,8
10,00	144	15,24	15,24	245,8	250,8	501,5	517,1	535,8
12,00	177	25,11	25,11	465,0	474,5	949,0	978,4	403,2
+ 14,00 +	218	41,40	41,40	946,2	965,5	1931,1	1990,8	231,2
16,00	277	74,86	74,86	2169,8	2213,9	4427,8	4564,7	115,2
18,00	345	127,00	127,00	4585,6	4679,1	9358,3	9647,7	61,3
20,00	397	173,24	173,24	7207,2	7354,3	14708,6	15163,5	43,4

	EFFICIENCY				THRUST	
SPEED [kt]	EFFO	EFFG	EFFOA	MERIT	THRPROP [kN]	DELTHR [kN]
2,00	0,6607	0,9700	0,6420	0,43349	1,74	3,02
4,00	0,6615	0,9700	0,6421	0,43234	6,94	12,01
6,00	0,6658	0,9700	0,6466	0,42065	14,50	25,10
8,00	0,6746	0,9700	0,6537	0,41109	24,22	41,91
10,00	0,6768	0,9700	0,6555	0,4072	36,93	63,91
12,00	0,6898	0,9700	0,6685	0,41929	57,61	99,69
+ 14,00 +	0,6480	0,9700	0,6272	0,45144	97,17	168,16
16,00	0,6036	0,9700	0,5841	0,50283	181,56	314,20
18,00	0,5585	0,9700	0,5403	0,54501	315,51	546,01
20,00	0,5425	0,9700	0,5247	0,55836	433,45	750,10

Mediante dicho programa, la potencia obtenida para nuestro buque es de 1990,8 Kw.

Con lo cual, vamos a coger el dato más restrictivo siendo en este caso el calculado mediante la fórmula anterior, ya que se trata de la estimación preliminar de la potencia propulsora.

$$\boldsymbol{Pot\ (kW) = 2.815,20\ Kw}$$

6 ESTIMACIÓN PRELIMINAR DE PESOS

6.1 Peso muerto

El valor del peso muerto se obtendrá a partir de un desglose de los distintos pesos que componen el peso muerto del buque:

6.1.1 Carga útil

Sabiendo que dispondremos de una cubierta de carga de 400 m^2, vamos a tomar un valor aproximado mediante la base de datos las toneladas a almacenar en dicha cubierta en un buque con una superficie similar.

Carga útil: 1200 t.

6.1.2 Consumos

Los consumos sabemos que son cargas variables durante la navegación que dependen de la autonomía del buque.

Dichos consumos los podemos clasificar en combustible, aceite, agua dulce, agua de alimentación y potable y víveres.

- Combustible

El fabricante suministra la información de los consumos específicos y las características admisibles más desfavorables, como la viscosidad, de cada aparato, aunque, por motivos comerciales, en unas condiciones de funcionamiento óptimas.

Debido a que el cálculo de la potencia propulsora y la elección del número de motores se realizará más adelante, estimaremos el peso del combustible a partir de los datos de la capacidad del buque del tipo PSV “Havila Clipper” debido a su similitud en cuanto a dimensiones principales con respecto a nuestro buque.

En dicho buque la capacidad del tanque de Marine Diesel Oil es de 940 m^3. Considerando una densidad de MDO de 0,90 t/m^3. Por tanto:

$$\boldsymbol{Pcombustible = 940 * 0.90 = 846\ t}$$

- Peso Aceite de lubricación

En el buque se utilizan distintos tipos de aceite para distintos servicios, que se pueden agrupar en:

-Lubricación de motores.

-Hidráulico, principalmente para la maquinaria de cubierta.

Las cantidades a transportar son recomendadas por los suministradores de los equipos correspondientes. En los servicios de lubricación es norma disponer un tanque igual o ligeramente superior al de servicio, como reserva o almacén. Para el tanque de servicio se puede estimar un peso entre 3-4% del peso del combustible de propulsión. Así pues:

$$\boldsymbol{Paceite = 846 * 0.04 = 33,84\ t}$$

- Peso de agua dulce

Para esta partida hay que tener en cuenta que la capacidad de agua dulce que se debe llevar tiene que cubrir las necesidades de los consumos de agua para servicios sanitarios y agua potable, agua dulce de refrigeración y agua de alimentación de calderas.

El agua dulce de refrigeración y el de alimentación de calderas están recomendados por los fabricantes de los aparatos,

En el "Proyecto básico del buque mercante" se fija el consumo de agua dulce entre 125 y 200 litros por persona y día, así que se considerará el valor más alto para tener un margen que permita aproximar el agua de refrigeración.

Teniendo en cuenta que nuestro buque dispondrá de una capacidad para 25 personas:

$$25\ personas * 200 \frac{L}{pers.\ * dia} = 5000 \frac{l}{dia} = 5 \frac{m^3}{dia}$$

Debido a que el buque tendrá una autonomía de 5000 millas a 14 nudos, se supone un total de 14,88 días.

$$\boldsymbol{Paguadulce = 5 \frac{m^3}{dia} * 14,88\ días = 74,4\ m^3 = 74,4\ t}$$

- Peso de víveres

Se recomiendan 5 kg por persona y día en buques mercantes, llegándose a 15 kg por personas y día en buques de pasaje.

En nuestro caso, tomaremos 10 kg por persona y día ya que se trata de buque para fines especiales, cuyos tripulantes y pasajeros serán trabajadores de la plataforma a la que se de apoyo:

$$\boldsymbol{Pvíveres = 10 \frac{kg}{pers * dia} * 25\ pers.\ * 14,88\ dias = 3720\ kg = 3,72\ t}$$

6.1.3 Tripulación y pasajes

A efectos de pesos se consideran 125 kg por persona, por lo que, como se debe disponer una acomodación para 25 personas.

$$\boldsymbol{Ptripulacionypasaje = 125\ kg * 25\ pers. = 3125\ kg = 3,125\ t}$$

6.1.4 Pertrechos

Los pertrechos son todos los elementos que el armador añade como repuestos o necesidades adicionales del buque, como pinturas, estachas y cabos adicionales, etc.

El rango normal del peso de los pertrechos está entre 10 t y 100 t, según el tamaño del buque y el estándar del armador. Se valorarán 50 toneladas

$$\boldsymbol{Ppertrechos = 50\ t}.$$

6.1.5 Peso muerto final

El valor del peso muerto total será la suma de la carga útil, consumos, trip y pasaje y pertrechos.

$$Peso\ muerto = Pcarga\acute{u}til + Pconsumos + \ Ptrip.ypasaje + Ppertrechos$$

$$Peso\ muerto = 2200 + 846 + 33{,}84 + 74{,}4 + 3{,}72 + 3{,}125 + 50$$

$$\boldsymbol{Peso\ muerto = 3211\ t}$$

6.2 Peso en rosca

Para el cálculo del peso en rosca, vamos a utilizar la fórmula dada por el libro “Cálculo del desplazamiento” [9] del profesor F.Junco en el cual expresa el valor del peso en rosca de la siguiente forma:

$$Peso\ rosca = Peso\ acero + Peso\ maquinaria + Peso\ equipo$$

$$Peso\ rosca = 0{,}14 * Lpp * B * D + 0{,}03 * BHP + 0{,}045 * Lpp * B * D$$

$$Peso\ rosca = 0{,}14 * 76{,}26 * 19{,}05 * 7{,}9 + 0{,}03 * 3800 + 0{,}045 * 76{,}26 * 19{,}05 * 7{,}9$$

$$\boldsymbol{Peso\ rosca = 1606{,}74 + 114 + 516{,}45 = 2237{,}19\ t}$$

7 VALIDACIÓN DEL FRANCOBORDO

En este cuaderno vamos a realizar una estimación comprobándose que se cumple lo indicado en el Convenio Internacional de Líneas de Máxima Carga de 1966. Hemos utilizado un documento Excel mediante el cual, introduciendo los datos correspondientes podemos calcular el Francobordo mínimo.

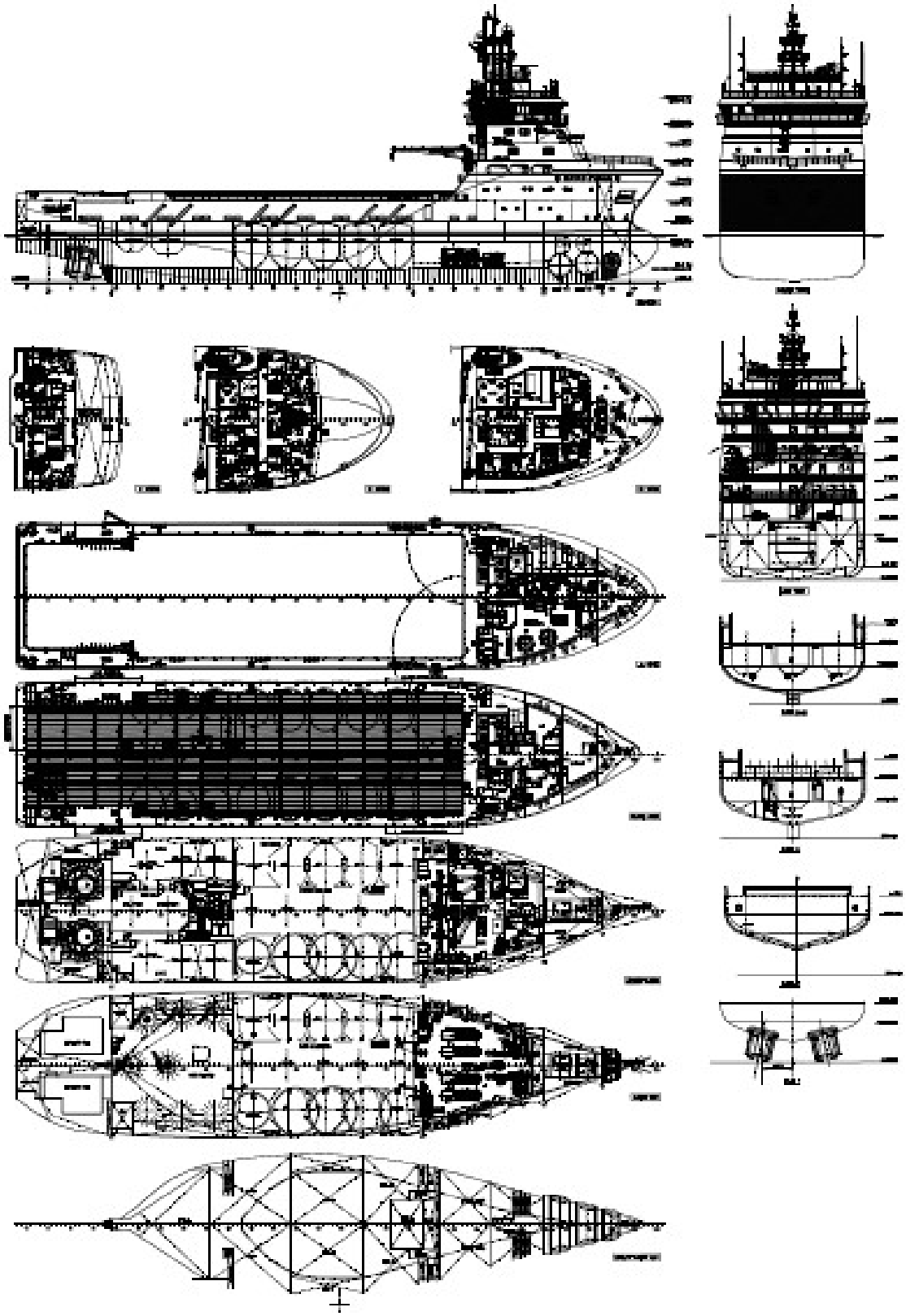
Para realizar dichos cálculos hemos utilizado como referencia el buque Edda Fram, de nuestra base de datos y cuya información se encuentra en los Anexos y se han realizado las estimaciones oportunas.

El cálculo detallado del francobordo se realizará en el cuaderno 9, con las correspondientes correcciones por eslora, coeficiente de bloque, puntal, arrufo…

El cálculo del francobordo mediante el documento Excel, lo podemos ver en el apartado de Anexos de forma completa obteniendo los siguientes resultados:

Minimun Summer Freeboard	*1148 mm*
Maximun Summer Draught	*6770 mm*

8 DISPOSICIÓN GENERAL PRELIMINAR



9 REFERENCIAS

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ANEXO 1: TABLA BASE DE DATOS

	Buque	Armador	Tipo de Buque	Referencia	SSCC	Año	LOA	Lpp	B	D	T	TPM	Potencia (HP)	Potencia (KW)	Tank oil recov.	S.cubierta	Cb	V.max	V.serv.	Acomodacion
1	Damen8116	Damen	OSRV	http://www.damen.com/	Germanisher Lloyd	2010	81,3	70,6	16	7,5	6,5	2170	8850,6	6600	800	450		16	14,5	44
2	Damen OSRV 1050	Damen	OSRV	http://www.damen.com/	Lloyd's Register	2011	67,1	59	14	6	5	1600	4023	3000	1050	330	0,76	13	11,5	24
3	Esvagt Aurora	Esvagt AS	Standby vessel	www.zamakonayards.com	DNV	2012	87	81	19	7,5	6	2300	8850,6	6600	1550	420		16,5	14	40
5	Don Inda	SASEMAR	OSRV	www.zamakonayards.com	DNV	2006	80	69,3	18	8,25	6	3050	21456	6300	1700	500		17,5	15	22
8	DP II - Bow thruster	-	PSV / Oil recovering	www.horizonship.com		2016	65	58,5	16	6,2	5	1500	8046	6000	370	435		13	11	50
10	Focal 522	Ved shipping	PSV / Oil recovering	www.vedshipping.com	DNV	2016	78	70,2	18,6	7,8	6	4000	8046	6000	800	400	0,71	15	13	60
12	North Barents	Simek	PSV / Oil recovering	www.simek.no	DNV	2017	92	83,4	19,2	8,5	6,95	4100	11264,4	8400	800	600		16	14,5	40
13	ABS +A1	-	AHTS / Oil recovering	www.allship.net		2015	78	69,3	18	8	5,2	3000	6034,5	4500	1200	520	0,73	14,5	13	50
14	AH Varazze	Rimorchiatori Riuniti	AHTS / Oil recovering	www.rimorchiatori.com	RINA C	2014	79,9	71	19,2	7,82	6,7	2874	6436,8	4800	1020	590		17	14,5	35
15	AH Valletta	Rimorchiatori Riuniti	AHTS / Oil recovering	www.rimorchiatori.com	RINA C	2010	76,5	68	17,5	7	6,2	2775	10728	8000	1050	600	0,72	12,5	10	36
16	Maerks Master	Maersk Supply Services	AHTS / Oil recovering	https://www.kleven.no	DNV	2017	95	84,8	22	9	7,2	4500	22797	11000	920	622		16	14	52
17	VS 4612 AHTS	Wartsila	AHTS / Oil recovering	www.wartsila.com	DNV	2015	69,6	60,5	17	7	6,2	2298	12069	9000	742	473		15,8	12	24
18	ASSO Trenta	Augusta Offshore	PSV / Oil recovering	www.augusta-offshore.cafima.it	RINA C	2009	76,6	68,2	16	7	5,83	2415	7110	5332,5	993	688		14,5	12,5	18
19	Highland Chieftain	GulfMark UK ltd	PSV / Oil recovering	www.gulfmark.com	DNV	2013	79,45	70,6	16,8	7,4	6	4000	9601,56	7160	1200	648	0,69	14,5	11	26
20	Edda Fram	Skipsteknisk AS	PSV / Oil recovering	www.skipsteknisk.no	DNV	2009	85,8	77,4	19,2	8	6,5	4200		7120	5340	1036	900		16	14

ANEXO 2: TABLA CIFRA DE MÉRITO

Lpp	B	D	T	Cb	Lpp/B	B/D	B/T	T/D	¿Cumple?	Fr	Cm	Cp	Cf	Xcc	PS	CMg	CM0	CEp	CHf	Per	CEr	CE	CC0	VA	CC
67,266	17,544	9,732	7,571	0,68	3,834	1,803	2,317	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	209,46	127.982,20	3.270.146,23	6.038.756,57	603.875,66	6.642.632,22
67,266	17,544	9,732	7,571	0,69	3,834	1,803	2,317	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	209,46	127.982,20	3.270.146,23	6.037.870,88	603.787,09	6.641.657,97
67,266	17,544	9,732	7,571	0,70	3,834	1,803	2,317	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	209,46	127.982,20	3.270.146,23	6.036.985,20	603.698,52	6.640.683,72
67,266	17,544	9,732	7,571	0,71	3,834	1,803	2,317	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	209,46	127.982,20	3.270.146,23	6.036.099,52	603.609,95	6.639.709,47
67,266	18,044	9,463	7,361	0,68	3,728	1,907	2,451	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	212,43	129.793,14	3.271.957,17	6.040.567,51	604.056,75	6.644.624,26
67,266	18,044	9,463	7,361	0,69	3,728	1,907	2,451	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	212,43	129.793,14	3.271.957,17	6.039.681,83	603.968,18	6.643.650,01
67,266	18,044	9,463	7,361	0,70	3,728	1,907	2,451	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	212,43	129.793,14	3.271.957,17	6.038.796,15	603.879,61	6.642.675,76
67,266	18,044	9,463	7,361	0,71	3,728	1,907	2,451	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	212,43	129.793,14	3.271.957,17	6.037.910,47	603.791,05	6.641.701,51
67,266	18,544	9,207	7,163	0,68	3,627	2,014	2,589	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	215,35	131.579,17	3.273.743,20	6.042.353,54	604.235,35	6.646.588,89
67,266	18,544	9,207	7,163	0,69	3,627	2,014	2,589	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	215,35	131.579,17	3.273.743,20	6.041.467,86	604.146,79	6.645.614,64
67,266	18,544	9,207	7,163	0,70	3,627	2,014	2,589	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	215,35	131.579,17	3.273.743,20	6.040.582,17	604.058,22	6.644.640,39
67,266	18,544	9,207	7,163	0,71	3,627	2,014	2,589	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	215,35	131.579,17	3.273.743,20	6.039.696,49	603.969,65	6.643.666,14
67,266	19,044	8,966	6,975	0,68	3,532	2,124	2,730	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	218,23	133.341,27	3.275.505,30	6.044.115,64	604.411,56	6.648.527,20
67,266	19,044	8,966	6,975	0,69	3,532	2,124	2,730	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	218,23	133.341,27	3.275.505,30	6.043.229,96	604.323,00	6.647.552,95
67,266	19,044	8,966	6,975	0,70	3,532	2,124	2,730	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	218,23	133.341,27	3.275.505,30	6.042.344,28	604.234,43	6.646.578,70
67,266	19,044	8,966	6,975	0,71	3,532	2,124	2,730	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	218,23	133.341,27	3.275.505,30	6.041.458,60	604.145,86	6.645.604,46
67,266	19,544	8,736	6,796	0,68	3,442	2,237	2,876	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	221,08	135.080,39	3.277.244,42	6.045.854,76	604.585,48	6.650.440,24
67,266	19,544	8,736	6,796	0,69	3,442	2,237	2,876	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	221,08	135.080,39	3.277.244,42	6.044.969,08	604.496,91	6.649.465,99
67,266	19,544	8,736	6,796	0,70	3,442	2,237	2,876	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	221,08	135.080,39	3.277.244,42	6.044.083,40	604.408,34	6.648.491,74
67,266	19,544	8,736	6,796	0,71	3,442	2,237	2,876	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	221,08	135.080,39	3.277.244,42	6.043.197,71	604.319,77	6.647.517,49
67,266	20,044	8,518	6,627	0,68	3,356	2,353	3,025	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	223,89	136.797,40	3.278.961,43	6.047.571,77	604.757,18	6.652.328,95
67,266	20,044	8,518	6,627	0,69	3,356	2,353	3,025	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	223,89	136.797,40	3.278.961,43	6.046.686,09	604.668,61	6.651.354,70
67,266	20,044	8,518	6,627	0,70	3,356	2,353	3,025	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	223,89	136.797,40	3.278.961,43	6.045.800,41	604.580,04	6.650.380,45
67,266	20,044	8,518	6,627	0,71	3,356	2,353	3,025	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	223,89	136.797,40	3.278.961,43	6.044.914,73	604.491,47	6.649.406,20
67,266	20,544	8,311	6,466	0,68	3,274	2,472	3,177	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	226,67	138.493,13	3.280.657,16	6.049.267,50	604.926,75	6.654.194,25
67,266	20,544	8,311	6,466	0,69	3,274	2,472	3,177	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	226,67	138.493,13	3.280.657,16	6.048.381,82	604.838,18	6.653.220,00
67,266	20,544	8,311	6,466	0,70	3,274	2,472	3,177	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	226,67	138.493,13	3.280.657,16	6.047.496,13	604.749,61	6.652.245,75
67,266	20,544	8,311	6,466	0,71	3,274	2,472	3,177	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	226,67	138.493,13	3.280.657,16	6.046.610,45	604.661,05	6.651.271,50
67,266	21,044	8,114	6,312	0,68	3,196	2,594	3,334	0,801	NO	2,62	0,89	0,77	0,87	0,61	1.090,30	806.069,88	##########	##########	########	229,41	140.168,34	3.282.332,37	6.050.942,71	605.094,27	6.656.036,98
67,266	21,044	8,114	6,312	0,69	3,196	2,594	3,334	0,801	NO	2,62	0,89	0,78	0,87	0,74	1.089,95	805.812,02	##########	##########	########	229,41	140.168,34	3.282.332,37	6.050.057,03	605.005,70	6.655.062,73
67,266	21,044	8,114	6,312	0,70	3,196	2,594	3,334	0,801	NO	2,62	0,89	0,79	0,88	0,88	1.089,60	805.554,16	##########	##########	########	229,41	140.168,34	3.282.332,37	6.049.171,35	604.917,13	6.654.088,48
67,266	21,044	8,114	6,312	0,71	3,196	2,594	3,334	0,801	NO	2,62	0,89	0,80	0,88	1,02	1.089,25	805.296,29	##########	##########	########	229,41	140.168,34	3.282.332,37	6.048.285,67	604.828,57	6.653.114,23
67,766	17,544	9,660	7,515	0,68	3,863	1,816	2,334	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	211,02	128.933,51	3.271.097,54	6.052.677,90	605.267,79	6.657.945,69
67,766	17,544	9,660	7,515	0,69	3,863	1,816	2,334	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	211,02	128.933,51	3.271.097,54	6.051.788,07	605.178,81	6.656.966,87
67,766	17,544	9,660	7,515	0,70	3,863	1,816	2,334	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	211,02	128.933,51	3.271.097,54	6.050.898,24	605.089,82	6.655.988,06
67,766	17,544	9,660	7,515	0,71	3,863	1,816	2,334	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	211,02	128.933,51	3.271.097,54	6.050.008,41	605.000,84	6.655.009,25
67,766	18,044	9,393	7,307	0,68	3,756	1,921	2,469	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	214,01	130.757,92	3.272.921,95	6.054.502,31	605.450,23	6.659.952,54
67,766	18,044	9,393	7,307	0,69	3,756	1,921	2,469	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	214,01	130.757,92	3.272.921,95	6.053.612,48	605.361,25	6.658.973,72
67,766	18,044	9,393	7,307	0,70	3,756	1,921	2,469	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	214,01	130.757,92	3.272.921,95	6.052.722,64	605.272,26	6.657.994,91
67,766	18,044	9,393	7,307	0,71	3,756	1,921	2,469	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	214,01	130.757,92	3.272.921,95	6.051.832,81	605.183,28	6.657.016,10
67,766	18,544	9,139	7,110	0,68	3,654	2,029	2,608	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	216,95	132.557,22	3.274.721,25	6.056.301,61	605.630,16	6.661.931,77
67,766	18,544	9,139	7,110	0,69	3,654	2,029	2,608	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	216,95	132.557,22	3.274.721,25	6.055.411,78	605.541,18	6.660.952,95
67,766	18,544	9,139	7,110	0,70	3,654	2,029	2,608	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	216,95	132.557,22	3.274.721,25	6.054.521,94	605.452,19	6.659.974,14
67,766	18,544	9,139	7,110	0,71	3,654	2,029	2,608	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	216,95	132.557,22	3.274.721,25	6.053.632,11	605.363,21	6.658.995,33

67,766	19,044	8,900	6,923	0,68	3,558	2,140	2,751	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	219,86	134.332,42	3.276.496,45	6.058.076,81	605.807,68	6.663.884,49
67,766	19,044	8,900	6,923	0,69	3,558	2,140	2,751	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	219,86	134.332,42	3.276.496,45	6.057.186,98	605.718,70	6.662.905,67
67,766	19,044	8,900	6,923	0,70	3,558	2,140	2,751	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	219,86	134.332,42	3.276.496,45	6.056.297,15	605.629,71	6.661.926,86
67,766	19,044	8,900	6,923	0,71	3,558	2,140	2,751	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	219,86	134.332,42	3.276.496,45	6.055.407,32	605.540,73	6.660.948,05
67,766	19,544	8,672	6,746	0,68	3,467	2,254	2,897	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	222,72	136.084,46	3.278.248,50	6.059.828,85	605.982,89	6.665.811,74
67,766	19,544	8,672	6,746	0,69	3,467	2,254	2,897	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	222,72	136.084,46	3.278.248,50	6.058.939,02	605.893,90	6.664.832,93
67,766	19,544	8,672	6,746	0,70	3,467	2,254	2,897	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	222,72	136.084,46	3.278.248,50	6.058.049,19	605.804,92	6.663.854,11
67,766	19,544	8,672	6,746	0,71	3,467	2,254	2,897	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	222,72	136.084,46	3.278.248,50	6.057.159,36	605.715,94	6.662.875,30
67,766	20,044	8,456	6,578	0,68	3,381	2,370	3,047	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	225,56	137.814,24	3.279.978,27	6.061.558,63	606.155,86	6.667.714,49
67,766	20,044	8,456	6,578	0,69	3,381	2,370	3,047	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	225,56	137.814,24	3.279.978,27	6.060.668,80	606.066,88	6.666.735,68
67,766	20,044	8,456	6,578	0,70	3,381	2,370	3,047	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	225,56	137.814,24	3.279.978,27	6.059.778,97	605.977,90	6.665.756,86
67,766	20,044	8,456	6,578	0,71	3,381	2,370	3,047	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	225,56	137.814,24	3.279.978,27	6.058.889,14	605.888,91	6.664.778,05
67,766	20,544	8,250	6,418	0,68	3,299	2,490	3,201	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	228,35	139.522,57	3.281.686,60	6.063.266,96	606.326,70	6.669.593,65
67,766	20,544	8,250	6,418	0,69	3,299	2,490	3,201	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	228,35	139.522,57	3.281.686,60	6.062.377,13	606.237,71	6.668.614,84
67,766	20,544	8,250	6,418	0,70	3,299	2,490	3,201	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	228,35	139.522,57	3.281.686,60	6.061.487,30	606.148,73	6.667.636,03
67,766	20,544	8,250	6,418	0,71	3,299	2,490	3,201	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	228,35	139.522,57	3.281.686,60	6.060.597,47	606.059,75	6.666.657,21
67,766	21,044	8,054	6,265	0,68	3,220	2,613	3,359	0,801	NO	2,61	0,89	0,77	0,87	0,61	1.095,41	809.846,05	##########	##########	########	231,11	141.210,23	3.283.374,27	6.064.954,62	606.495,46	6.671.450,09
67,766	21,044	8,054	6,265	0,69	3,220	2,613	3,359	0,801	NO	2,61	0,89	0,78	0,87	0,75	1.095,06	809.586,98	##########	##########	########	231,11	141.210,23	3.283.374,27	6.064.064,79	606.406,48	6.670.471,27
67,766	21,044	8,054	6,265	0,70	3,220	2,613	3,359	0,801	NO	2,61	0,89	0,79	0,88	0,89	1.094,71	809.327,91	##########	##########	########	231,11	141.210,23	3.283.374,27	6.063.174,96	606.317,50	6.669.492,46
67,766	21,044	8,054	6,265	0,71	3,220	2,613	3,359	0,801	NO	2,61	0,89	0,80	0,88	1,02	1.094,36	809.068,84	##########	##########	########	231,11	141.210,23	3.283.374,27	6.062.285,13	606.228,51	6.668.513,64
68,266	17,544	9,590	7,460	0,68	3,891	1,829	2,352	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	212,58	129.884,82	3.272.048,86	6.066.563,98	606.656,40	6.673.220,37
68,266	17,544	9,590	7,460	0,69	3,891	1,829	2,352	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	212,58	129.884,82	3.272.048,86	6.065.670,01	606.567,00	6.672.237,01
68,266	17,544	9,590	7,460	0,70	3,891	1,829	2,352	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	212,58	129.884,82	3.272.048,86	6.064.776,04	606.477,60	6.671.253,64
68,266	17,544	9,590	7,460	0,71	3,891	1,829	2,352	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	212,58	129.884,82	3.272.048,86	6.063.882,07	606.388,21	6.670.270,28
68,266	18,044	9,324	7,254	0,68	3,783	1,935	2,488	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	215,59	131.722,69	3.273.886,72	6.068.401,84	606.840,18	6.675.242,03
68,266	18,044	9,324	7,254	0,69	3,783	1,935	2,488	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	215,59	131.722,69	3.273.886,72	6.067.507,88	606.750,79	6.674.258,66
68,266	18,044	9,324	7,254	0,70	3,783	1,935	2,488	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	215,59	131.722,69	3.273.886,72	6.066.613,91	606.661,39	6.673.275,30
68,266	18,044	9,324	7,254	0,71	3,783	1,935	2,488	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	215,59	131.722,69	3.273.886,72	6.065.719,94	606.571,99	6.672.291,93
68,266	18,544	9,073	7,058	0,68	3,681	2,044	2,627	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	218,55	133.535,27	3.275.699,30	6.070.214,42	607.021,44	6.677.235,86
68,266	18,544	9,073	7,058	0,69	3,681	2,044	2,627	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	218,55	133.535,27	3.275.699,30	6.069.320,45	606.932,05	6.676.252,50
68,266	18,544	9,073	7,058	0,70	3,681	2,044	2,627	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	218,55	133.535,27	3.275.699,30	6.068.426,48	606.842,65	6.675.269,13
68,266	18,544	9,073	7,058	0,71	3,681	2,044	2,627	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	218,55	133.535,27	3.275.699,30	6.067.532,51	606.753,25	6.674.285,77
68,266	19,044	8,834	6,873	0,68	3,585	2,156	2,771	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	221,48	135.323,57	3.277.487,60	6.072.002,72	607.200,27	6.679.202,99
68,266	19,044	8,834	6,873	0,69	3,585	2,156	2,771	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	221,48	135.323,57	3.277.487,60	6.071.108,75	607.110,88	6.678.219,63
68,266	19,044	8,834	6,873	0,70	3,585	2,156	2,771	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	221,48	135.323,57	3.277.487,60	6.070.214,78	607.021,48	6.677.236,26
68,266	19,044	8,834	6,873	0,71	3,585	2,156	2,771	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	221,48	135.323,57	3.277.487,60	6.069.320,81	606.932,08	6.676.252,90
68,266	19,544	8,608	6,697	0,68	3,493	2,270	2,918	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	224,37	137.088,54	3.279.252,57	6.073.767,69	607.376,77	6.681.144,46
68,266	19,544	8,608	6,697	0,69	3,493	2,270	2,918	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	224,37	137.088,54	3.279.252,57	6.072.873,72	607.287,37	6.680.161,10
68,266	19,544	8,608	6,697	0,70	3,493	2,270	2,918	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	224,37	137.088,54	3.279.252,57	6.071.979,76	607.197,98	6.679.177,73
68,266	19,544	8,608	6,697	0,71	3,493	2,270	2,918	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	224,37	137.088,54	3.279.252,57	6.071.085,79	607.108,58	6.678.194,37
68,266	20,044	8,394	6,530	0,68	3,406	2,388	3,070	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	227,22	138.831,08	3.280.995,11	6.075.510,23	607.551,02	6.683.061,25
68,266	20,044	8,394	6,530	0,69	3,406	2,388	3,070	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	227,22	138.831,08	3.280.995,11	6.074.616,26	607.461,63	6.682.077,89
68,266	20,044	8,394	6,530	0,70	3,406	2,388	3,070	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	227,22	138.831,08	3.280.995,11	6.073.722,29	607.372,23	6.681.094,52
68,266	20,044	8,394	6,530	0,71	3,406	2,388	3,070	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	227,22	138.831,08	3.280.995,11	6.072.828,32	607.282,83	6.680.111,16
68,266	20,544	8,189	6,371	0,68	3,323	2,509	3,225	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	230,04	140.552,01	3.282.716,05	6.077.231,17	607.723,12	6.684.954,28
68,266	20,544	8,189	6,371	0,69	3,323	2,509	3,225	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	230,04	140.552,01	3.282.716,05	6.076.337,20	607.633,72	6.683.970,92
68,266	20,544	8,189	6,371	0,70	3,323	2,509	3,225	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	230,04	140.552,01	3.282.716,05	6.075.443,23	607.544,32	6.682.987,55

68,266	20,544	8,189	6,371	0,71	3,323	2,509	3,225	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	230,04	140.552,01	3.282.716,05	6.074.549,26	607.454,93	6.682.004,19
68,266	21,044	7,995	6,220	0,68	3,244	2,632	3,383	0,801	NO	2,60	0,89	0,77	0,87	0,62	1.100,50	813.611,95	##########	##########	########	232,82	142.252,13	3.284.416,16	6.078.931,28	607.893,13	6.686.824,41
68,266	21,044	7,995	6,220	0,69	3,244	2,632	3,383	0,801	NO	2,60	0,89	0,78	0,87	0,75	1.100,15	813.351,68	##########	##########	########	232,82	142.252,13	3.284.416,16	6.078.037,31	607.803,73	6.685.841,05
68,266	21,044	7,995	6,220	0,70	3,244	2,632	3,383	0,801	NO	2,60	0,89	0,79	0,88	0,89	1.099,80	813.091,40	##########	##########	########	232,82	142.252,13	3.284.416,16	6.077.143,35	607.714,33	6.684.857,68
68,266	21,044	7,995	6,220	0,71	3,244	2,632	3,383	0,801	NO	2,60	0,89	0,80	0,88	1,03	1.099,45	812.831,13	##########	##########	########	232,82	142.252,13	3.284.416,16	6.076.249,38	607.624,94	6.683.874,31
68,766	17,544	9,520	7,406	0,68	3,920	1,843	2,369	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	214,13	130.836,14	3.273.000,17	6.080.415,15	608.041,52	6.688.456,67
68,766	17,544	9,520	7,406	0,69	3,920	1,843	2,369	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	214,13	130.836,14	3.273.000,17	6.079.517,06	607.951,71	6.687.468,76
68,766	17,544	9,520	7,406	0,70	3,920	1,843	2,369	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	214,13	130.836,14	3.273.000,17	6.078.618,96	607.861,90	6.686.480,86
68,766	17,544	9,520	7,406	0,71	3,920	1,843	2,369	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	214,13	130.836,14	3.273.000,17	6.077.720,87	607.772,09	6.685.492,95
68,766	18,044	9,256	7,201	0,68	3,811	1,949	2,506	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	217,16	132.687,47	3.274.851,50	6.082.266,48	608.226,65	6.690.493,13
68,766	18,044	9,256	7,201	0,69	3,811	1,949	2,506	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	217,16	132.687,47	3.274.851,50	6.081.368,39	608.136,84	6.689.505,22
68,766	18,044	9,256	7,201	0,70	3,811	1,949	2,506	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	217,16	132.687,47	3.274.851,50	6.080.470,29	608.047,03	6.688.517,32
68,766	18,044	9,256	7,201	0,71	3,811	1,949	2,506	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	217,16	132.687,47	3.274.851,50	6.079.572,19	607.957,22	6.687.529,41
68,766	18,544	9,007	7,007	0,68	3,708	2,059	2,647	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	220,15	134.513,32	3.276.677,35	6.084.092,33	608.409,23	6.692.501,57
68,766	18,544	9,007	7,007	0,69	3,708	2,059	2,647	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	220,15	134.513,32	3.276.677,35	6.083.194,24	608.319,42	6.691.513,66
68,766	18,544	9,007	7,007	0,70	3,708	2,059	2,647	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	220,15	134.513,32	3.276.677,35	6.082.296,14	608.229,61	6.690.525,76
68,766	18,544	9,007	7,007	0,71	3,708	2,059	2,647	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	220,15	134.513,32	3.276.677,35	6.081.398,05	608.139,80	6.689.537,85
68,766	19,044	8,770	6,823	0,68	3,611	2,171	2,791	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	223,10	136.314,72	3.278.478,75	6.085.893,73	608.589,37	6.694.483,10
68,766	19,044	8,770	6,823	0,69	3,611	2,171	2,791	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	223,10	136.314,72	3.278.478,75	6.084.995,63	608.499,56	6.693.495,20
68,766	19,044	8,770	6,823	0,70	3,611	2,171	2,791	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	223,10	136.314,72	3.278.478,75	6.084.097,54	608.409,75	6.692.507,29
68,766	19,044	8,770	6,823	0,71	3,611	2,171	2,791	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	223,10	136.314,72	3.278.478,75	6.083.199,44	608.319,94	6.691.519,39
68,766	19,544	8,546	6,648	0,68	3,519	2,287	2,940	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	226,01	138.092,62	3.280.256,65	6.087.671,63	608.767,16	6.696.438,79
68,766	19,544	8,546	6,648	0,69	3,519	2,287	2,940	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	226,01	138.092,62	3.280.256,65	6.086.773,54	608.677,35	6.695.450,89
68,766	19,544	8,546	6,648	0,70	3,519	2,287	2,940	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	226,01	138.092,62	3.280.256,65	6.085.875,44	608.587,54	6.694.462,98
68,766	19,544	8,546	6,648	0,71	3,519	2,287	2,940	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	226,01	138.092,62	3.280.256,65	6.084.977,35	608.497,73	6.693.475,08
68,766	20,044	8,333	6,482	0,68	3,431	2,405	3,092	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	228,88	139.847,92	3.282.011,95	6.089.426,93	608.942,69	6.698.369,62
68,766	20,044	8,333	6,482	0,69	3,431	2,405	3,092	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	228,88	139.847,92	3.282.011,95	6.088.528,84	608.852,88	6.697.381,72
68,766	20,044	8,333	6,482	0,70	3,431	2,405	3,092	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	228,88	139.847,92	3.282.011,95	6.087.630,74	608.763,07	6.696.393,81
68,766	20,044	8,333	6,482	0,71	3,431	2,405	3,092	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	228,88	139.847,92	3.282.011,95	6.086.732,65	608.673,26	6.695.405,91
68,766	20,544	8,130	6,325	0,68	3,347	2,527	3,248	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	231,72	141.581,46	3.283.745,49	6.091.160,47	609.116,05	6.700.276,52
68,766	20,544	8,130	6,325	0,69	3,347	2,527	3,248	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	231,72	141.581,46	3.283.745,49	6.090.262,38	609.026,24	6.699.288,61
68,766	20,544	8,130	6,325	0,70	3,347	2,527	3,248	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	231,72	141.581,46	3.283.745,49	6.089.364,28	608.936,43	6.698.300,71
68,766	20,544	8,130	6,325	0,71	3,347	2,527	3,248	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	231,72	141.581,46	3.283.745,49	6.088.466,18	608.846,62	6.697.312,80
68,766	21,044	7,937	6,174	0,68	3,268	2,651	3,408	0,801	NO	2,59	0,89	0,77	0,87	0,62	1.105,58	817.367,70	##########	##########	########	234,52	143.294,03	3.285.458,06	6.092.873,04	609.287,30	6.702.160,34
68,766	21,044	7,937	6,174	0,69	3,268	2,651	3,408	0,801	NO	2,59	0,89	0,78	0,87	0,76	1.105,23	817.106,22	##########	##########	########	234,52	143.294,03	3.285.458,06	6.091.974,94	609.197,49	6.701.172,44
68,766	21,044	7,937	6,174	0,70	3,268	2,651	3,408	0,801	NO	2,59	0,89	0,79	0,88	0,90	1.104,87	816.844,74	##########	##########	########	234,52	143.294,03	3.285.458,06	6.091.076,85	609.107,68	6.700.184,53
68,766	21,044	7,937	6,174	0,71	3,268	2,651	3,408	0,801	NO	2,59	0,89	0,80	0,88	1,04	1.104,52	816.583,27	##########	##########	########	234,52	143.294,03	3.285.458,06	6.090.178,75	609.017,88	6.699.196,63
69,266	17,544	9,451	7,353	0,68	3,948	1,856	2,386	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	215,69	131.787,45	3.273.951,48	6.094.231,77	609.423,18	6.703.654,95
69,266	17,544	9,451	7,353	0,69	3,948	1,856	2,386	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	215,69	131.787,45	3.273.951,48	6.093.329,56	609.332,96	6.702.662,52
69,266	17,544	9,451	7,353	0,70	3,948	1,856	2,386	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	215,69	131.787,45	3.273.951,48	6.092.427,35	609.242,73	6.701.670,08
69,266	17,544	9,451	7,353	0,71	3,948	1,856	2,386	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	215,69	131.787,45	3.273.951,48	6.091.525,14	609.152,51	6.700.677,65
69,266	18,044	9,189	7,149	0,68	3,839	1,964	2,524	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	218,74	133.652,24	3.275.816,27	6.096.096,56	609.609,66	6.705.706,22
69,266	18,044	9,189	7,149	0,69	3,839	1,964	2,524	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	218,74	133.652,24	3.275.816,27	6.095.194,35	609.519,44	6.704.713,79
69,266	18,044	9,189	7,149	0,70	3,839	1,964	2,524	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	218,74	133.652,24	3.275.816,27	6.094.292,14	609.429,21	6.703.721,35
69,266	18,044	9,189	7,149	0,71	3,839	1,964	2,524	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	218,74	133.652,24	3.275.816,27	6.093.389,93	609.338,99	6.702.728,92
69,266	18,544	8,942	6,956	0,68	3,735	2,074	2,666	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	221,75	135.491,37	3.277.655,40	6.097.935,69	609.793,57	6.707.729,26
69,266	18,544	8,942	6,956	0,69	3,735	2,074	2,666	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	221,75	135.491,37	3.277.655,40	6.097.033,48	609.703,35	6.706.736,83

69,266	18,544	8,942	6,956	0,70	3,735	2,074	2,666	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	221,75	135.491,37	3.277.655,40	6.096.131,27	609.613,13	6.705.744,39
69,266	18,544	8,942	6,956	0,71	3,735	2,074	2,666	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	221,75	135.491,37	3.277.655,40	6.095.229,06	609.522,91	6.704.751,96
69,266	19,044	8,707	6,774	0,68	3,637	2,187	2,812	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	224,72	137.305,87	3.279.469,90	6.099.750,18	609.975,02	6.709.725,20
69,266	19,044	8,707	6,774	0,69	3,637	2,187	2,812	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	224,72	137.305,87	3.279.469,90	6.098.847,97	609.884,80	6.708.732,77
69,266	19,044	8,707	6,774	0,70	3,637	2,187	2,812	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	224,72	137.305,87	3.279.469,90	6.097.945,76	609.794,58	6.707.740,34
69,266	19,044	8,707	6,774	0,71	3,637	2,187	2,812	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	224,72	137.305,87	3.279.469,90	6.097.043,55	609.704,36	6.706.747,91
69,266	19,544	8,484	6,600	0,68	3,544	2,304	2,961	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	227,65	139.096,69	3.281.260,73	6.101.541,01	610.154,10	6.711.695,11
69,266	19,544	8,484	6,600	0,69	3,544	2,304	2,961	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	227,65	139.096,69	3.281.260,73	6.100.638,80	610.063,88	6.710.702,68
69,266	19,544	8,484	6,600	0,70	3,544	2,304	2,961	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	227,65	139.096,69	3.281.260,73	6.099.736,59	609.973,66	6.709.710,25
69,266	19,544	8,484	6,600	0,71	3,544	2,304	2,961	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	227,65	139.096,69	3.281.260,73	6.098.834,38	609.883,44	6.708.717,82
69,266	20,044	8,272	6,436	0,68	3,456	2,423	3,115	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	230,55	140.864,76	3.283.028,79	6.103.309,08	610.330,91	6.713.639,98
69,266	20,044	8,272	6,436	0,69	3,456	2,423	3,115	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	230,55	140.864,76	3.283.028,79	6.102.406,86	610.240,69	6.712.647,55
69,266	20,044	8,272	6,436	0,70	3,456	2,423	3,115	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	230,55	140.864,76	3.283.028,79	6.101.504,65	610.150,47	6.711.655,12
69,266	20,044	8,272	6,436	0,71	3,456	2,423	3,115	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	230,55	140.864,76	3.283.028,79	6.100.602,44	610.060,24	6.710.662,69
69,266	20,544	8,071	6,279	0,68	3,372	2,545	3,272	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	233,41	142.610,90	3.284.774,93	6.105.055,22	610.505,52	6.715.560,74
69,266	20,544	8,071	6,279	0,69	3,372	2,545	3,272	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	233,41	142.610,90	3.284.774,93	6.104.153,01	610.415,30	6.714.568,31
69,266	20,544	8,071	6,279	0,70	3,372	2,545	3,272	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	233,41	142.610,90	3.284.774,93	6.103.250,80	610.325,08	6.713.575,88
69,266	20,544	8,071	6,279	0,71	3,372	2,545	3,272	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	233,41	142.610,90	3.284.774,93	6.102.348,59	610.234,86	6.712.583,45
69,266	21,044	7,879	6,130	0,68	3,292	2,671	3,433	0,801	NO	2,58	0,89	0,77	0,87	0,63	1.110,65	821.113,38	##########	##########	########	236,23	144.335,92	3.286.499,95	6.106.780,24	610.678,02	6.717.458,27
69,266	21,044	7,879	6,130	0,69	3,292	2,671	3,433	0,801	NO	2,58	0,89	0,78	0,87	0,76	1.110,29	820.850,71	##########	##########	########	236,23	144.335,92	3.286.499,95	6.105.878,03	610.587,80	6.716.465,83
69,266	21,044	7,879	6,130	0,70	3,292	2,671	3,433	0,801	NO	2,58	0,89	0,79	0,88	0,90	1.109,94	820.588,03	##########	##########	########	236,23	144.335,92	3.286.499,95	6.104.975,82	610.497,58	6.715.473,40
69,266	21,044	7,879	6,130	0,71	3,292	2,671	3,433	0,801	NO	2,58	0,89	0,80	0,88	1,05	1.109,58	820.325,36	##########	##########	########	236,23	144.335,92	3.286.499,95	6.104.073,61	610.407,36	6.714.480,97
69,766	17,544	9,383	7,300	0,68	3,977	1,870	2,403	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	217,25	132.738,77	3.274.902,80	6.108.014,18	610.801,42	6.718.815,59
69,766	17,544	9,383	7,300	0,69	3,977	1,870	2,403	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	217,25	132.738,77	3.274.902,80	6.107.107,86	610.710,79	6.717.818,65
69,766	17,544	9,383	7,300	0,70	3,977	1,870	2,403	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	217,25	132.738,77	3.274.902,80	6.106.201,55	610.620,15	6.716.821,70
69,766	17,544	9,383	7,300	0,71	3,977	1,870	2,403	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	217,25	132.738,77	3.274.902,80	6.105.295,23	610.529,52	6.715.824,75
69,766	18,044	9,123	7,098	0,68	3,866	1,978	2,542	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	220,32	134.617,02	3.276.781,05	6.109.892,43	610.989,24	6.720.881,67
69,766	18,044	9,123	7,098	0,69	3,866	1,978	2,542	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	220,32	134.617,02	3.276.781,05	6.108.986,11	610.898,61	6.719.884,72
69,766	18,044	9,123	7,098	0,70	3,866	1,978	2,542	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	220,32	134.617,02	3.276.781,05	6.108.079,80	610.807,98	6.718.887,78
69,766	18,044	9,123	7,098	0,71	3,866	1,978	2,542	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	220,32	134.617,02	3.276.781,05	6.107.173,48	610.717,35	6.717.890,83
69,766	18,544	8,877	6,906	0,68	3,762	2,089	2,685	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	223,35	136.469,42	3.278.633,45	6.111.744,83	611.174,48	6.722.919,32
69,766	18,544	8,877	6,906	0,69	3,762	2,089	2,685	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	223,35	136.469,42	3.278.633,45	6.110.838,52	611.083,85	6.721.922,37
69,766	18,544	8,877	6,906	0,70	3,762	2,089	2,685	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	223,35	136.469,42	3.278.633,45	6.109.932,20	610.993,22	6.720.925,42
69,766	18,544	8,877	6,906	0,71	3,762	2,089	2,685	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	223,35	136.469,42	3.278.633,45	6.109.025,89	610.902,59	6.719.928,47
69,766	19,044	8,644	6,725	0,68	3,663	2,203	2,832	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	226,35	138.297,01	3.280.461,05	6.113.572,43	611.357,24	6.724.929,67
69,766	19,044	8,644	6,725	0,69	3,663	2,203	2,832	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	226,35	138.297,01	3.280.461,05	6.112.666,11	611.266,61	6.723.932,72
69,766	19,044	8,644	6,725	0,70	3,663	2,203	2,832	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	226,35	138.297,01	3.280.461,05	6.111.759,79	611.175,98	6.722.935,77
69,766	19,044	8,644	6,725	0,71	3,663	2,203	2,832	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	226,35	138.297,01	3.280.461,05	6.110.853,48	611.085,35	6.721.938,83
69,766	19,544	8,423	6,553	0,68	3,570	2,320	2,982	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	229,30	140.100,77	3.282.264,80	6.115.376,18	611.537,62	6.726.913,80
69,766	19,544	8,423	6,553	0,69	3,570	2,320	2,982	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	229,30	140.100,77	3.282.264,80	6.114.469,87	611.446,99	6.725.916,85
69,766	19,544	8,423	6,553	0,70	3,570	2,320	2,982	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	229,30	140.100,77	3.282.264,80	6.113.563,55	611.356,36	6.724.919,91
69,766	19,544	8,423	6,553	0,71	3,570	2,320	2,982	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	229,30	140.100,77	3.282.264,80	6.112.657,23	611.265,72	6.723.922,96
69,766	20,044	8,213	6,389	0,68	3,481	2,440	3,137	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	232,21	141.881,60	3.284.045,63	6.117.157,01	611.715,70	6.728.872,71
69,766	20,044	8,213	6,389	0,69	3,481	2,440	3,137	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	232,21	141.881,60	3.284.045,63	6.116.250,69	611.625,07	6.727.875,76
69,766	20,044	8,213	6,389	0,70	3,481	2,440	3,137	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	232,21	141.881,60	3.284.045,63	6.115.344,38	611.534,44	6.726.878,81
69,766	20,044	8,213	6,389	0,71	3,481	2,440	3,137	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	232,21	141.881,60	3.284.045,63	6.114.438,06	611.443,81	6.725.881,87
69,766	20,544	8,013	6,234	0,68	3,396	2,564	3,295	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	235,09	143.640,34	3.285.804,38	6.118.915,76	611.891,58	6.730.807,33

69,766	20,544	8,013	6,234	0,69	3,396	2,564	3,295	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	235,09	143.640,34	3.285.804,38	6.118.009,44	611.800,94	6.729.810,38
69,766	20,544	8,013	6,234	0,70	3,396	2,564	3,295	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	235,09	143.640,34	3.285.804,38	6.117.103,12	611.710,31	6.728.813,44
69,766	20,544	8,013	6,234	0,71	3,396	2,564	3,295	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	235,09	143.640,34	3.285.804,38	6.116.196,81	611.619,68	6.727.816,49
69,766	21,044	7,823	6,086	0,68	3,315	2,690	3,458	0,801	NO	2,57	0,89	0,77	0,87	0,63	1.115,70	824.849,10	##########	##########	########	237,93	145.377,82	3.287.541,85	6.120.653,23	612.065,32	6.732.718,55
69,766	21,044	7,823	6,086	0,69	3,315	2,690	3,458	0,801	NO	2,57	0,89	0,78	0,87	0,77	1.115,34	824.585,23	##########	##########	########	237,93	145.377,82	3.287.541,85	6.119.746,91	611.974,69	6.731.721,61
69,766	21,044	7,823	6,086	0,70	3,315	2,690	3,458	0,801	NO	2,57	0,89	0,79	0,88	0,91	1.114,99	824.321,36	##########	##########	########	237,93	145.377,82	3.287.541,85	6.118.840,60	611.884,06	6.730.724,66
69,766	21,044	7,823	6,086	0,71	3,315	2,690	3,458	0,801	NO	2,57	0,89	0,80	0,88	1,05	1.114,63	824.057,49	##########	##########	########	237,93	145.377,82	3.287.541,85	6.117.934,28	611.793,43	6.729.727,71
70,266	17,544	9,317	7,248	0,68	4,005	1,883	2,420	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	218,81	133.690,08	3.275.854,11	6.121.762,70	612.176,27	6.733.938,97
70,266	17,544	9,317	7,248	0,69	4,005	1,883	2,420	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	218,81	133.690,08	3.275.854,11	6.120.852,30	612.085,23	6.732.937,52
70,266	17,544	9,317	7,248	0,70	4,005	1,883	2,420	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	218,81	133.690,08	3.275.854,11	6.119.941,89	611.994,19	6.731.936,07
70,266	17,544	9,317	7,248	0,71	4,005	1,883	2,420	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	218,81	133.690,08	3.275.854,11	6.119.031,48	611.903,15	6.730.934,62
70,266	18,044	9,059	7,047	0,68	3,894	1,992	2,560	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	221,90	135.581,79	3.277.745,83	6.123.654,42	612.365,44	6.736.019,86
70,266	18,044	9,059	7,047	0,69	3,894	1,992	2,560	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	221,90	135.581,79	3.277.745,83	6.122.744,01	612.274,40	6.735.018,41
70,266	18,044	9,059	7,047	0,70	3,894	1,992	2,560	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	221,90	135.581,79	3.277.745,83	6.121.833,60	612.183,36	6.734.016,96
70,266	18,044	9,059	7,047	0,71	3,894	1,992	2,560	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	221,90	135.581,79	3.277.745,83	6.120.923,19	612.092,32	6.733.015,51
70,266	18,544	8,814	6,857	0,68	3,789	2,104	2,704	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	224,95	137.447,47	3.279.611,50	6.125.520,10	612.552,01	6.738.072,11
70,266	18,544	8,814	6,857	0,69	3,789	2,104	2,704	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	224,95	137.447,47	3.279.611,50	6.124.609,69	612.460,97	6.737.070,66
70,266	18,544	8,814	6,857	0,70	3,789	2,104	2,704	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	224,95	137.447,47	3.279.611,50	6.123.699,28	612.369,93	6.736.069,21
70,266	18,544	8,814	6,857	0,71	3,789	2,104	2,704	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	224,95	137.447,47	3.279.611,50	6.122.788,87	612.278,89	6.735.067,76
70,266	19,044	8,583	6,677	0,68	3,690	2,219	2,852	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	227,97	139.288,16	3.281.452,20	6.127.360,79	612.736,08	6.740.096,87
70,266	19,044	8,583	6,677	0,69	3,690	2,219	2,852	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	227,97	139.288,16	3.281.452,20	6.126.450,38	612.645,04	6.739.095,42
70,266	19,044	8,583	6,677	0,70	3,690	2,219	2,852	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	227,97	139.288,16	3.281.452,20	6.125.539,97	612.554,00	6.738.093,97
70,266	19,044	8,583	6,677	0,71	3,690	2,219	2,852	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	227,97	139.288,16	3.281.452,20	6.124.629,56	612.462,96	6.737.092,52
70,266	19,544	8,363	6,506	0,68	3,595	2,337	3,004	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	230,94	141.104,85	3.283.268,88	6.129.177,47	612.917,75	6.742.095,22
70,266	19,544	8,363	6,506	0,69	3,595	2,337	3,004	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	230,94	141.104,85	3.283.268,88	6.128.267,06	612.826,71	6.741.093,77
70,266	19,544	8,363	6,506	0,70	3,595	2,337	3,004	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	230,94	141.104,85	3.283.268,88	6.127.356,65	612.735,67	6.740.092,32
70,266	19,544	8,363	6,506	0,71	3,595	2,337	3,004	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	230,94	141.104,85	3.283.268,88	6.126.446,24	612.644,62	6.739.090,87
70,266	20,044	8,155	6,344	0,68	3,506	2,458	3,159	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	233,88	142.898,43	3.285.062,47	6.130.971,06	613.097,11	6.744.068,16
70,266	20,044	8,155	6,344	0,69	3,506	2,458	3,159	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	233,88	142.898,43	3.285.062,47	6.130.060,65	613.006,06	6.743.066,71
70,266	20,044	8,155	6,344	0,70	3,506	2,458	3,159	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	233,88	142.898,43	3.285.062,47	6.129.150,24	612.915,02	6.742.065,26
70,266	20,044	8,155	6,344	0,71	3,506	2,458	3,159	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	233,88	142.898,43	3.285.062,47	6.128.239,83	612.823,98	6.741.063,81
70,266	20,544	7,956	6,190	0,68	3,420	2,582	3,319	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	236,78	144.669,79	3.286.833,82	6.132.742,41	613.274,24	6.746.016,65
70,266	20,544	7,956	6,190	0,69	3,420	2,582	3,319	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	236,78	144.669,79	3.286.833,82	6.131.832,00	613.183,20	6.745.015,20
70,266	20,544	7,956	6,190	0,70	3,420	2,582	3,319	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	236,78	144.669,79	3.286.833,82	6.130.921,59	613.092,16	6.744.013,75
70,266	20,544	7,956	6,190	0,71	3,420	2,582	3,319	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	236,78	144.669,79	3.286.833,82	6.130.011,18	613.001,12	6.743.012,30
70,266	21,044	7,767	6,043	0,68	3,339	2,709	3,483	0,801	NO	2,56	0,89	0,77	0,87	0,64	1.120,74	828.574,96	##########	##########	########	239,64	146.419,71	3.288.583,75	6.134.492,34	613.449,23	6.747.941,57
70,266	21,044	7,767	6,043	0,69	3,339	2,709	3,483	0,801	NO	2,56	0,89	0,78	0,87	0,78	1.120,38	828.309,90	##########	##########	########	239,64	146.419,71	3.288.583,75	6.133.581,93	613.358,19	6.746.940,12
70,266	21,044	7,767	6,043	0,70	3,339	2,709	3,483	0,801	NO	2,56	0,89	0,79	0,88	0,92	1.120,02	828.044,84	##########	##########	########	239,64	146.419,71	3.288.583,75	6.132.671,52	613.267,15	6.745.938,67
70,266	21,044	7,767	6,043	0,71	3,339	2,709	3,483	0,801	NO	2,56	0,89	0,80	0,88	1,06	1.119,67	827.779,77	##########	##########	########	239,64	146.419,71	3.288.583,75	6.131.761,11	613.176,11	6.744.937,22
70,766	17,544	9,251	7,197	0,68	4,034	1,896	2,438	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	220,36	134.641,39	3.276.805,43	6.135.477,68	613.547,77	6.749.025,45
70,766	17,544	9,251	7,197	0,69	4,034	1,896	2,438	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	220,36	134.641,39	3.276.805,43	6.134.563,19	613.456,32	6.748.019,51
70,766	17,544	9,251	7,197	0,70	4,034	1,896	2,438	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	220,36	134.641,39	3.276.805,43	6.133.648,70	613.364,87	6.747.013,57
70,766	17,544	9,251	7,197	0,71	4,034	1,896	2,438	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	220,36	134.641,39	3.276.805,43	6.132.734,20	613.273,42	6.746.007,63
70,766	18,044	8,995	6,997	0,68	3,922	2,006	2,579	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	223,48	136.546,57	3.278.710,60	6.137.382,86	613.738,29	6.751.121,14
70,766	18,044	8,995	6,997	0,69	3,922	2,006	2,579	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	223,48	136.546,57	3.278.710,60	6.136.468,36	613.646,84	6.750.115,20
70,766	18,044	8,995	6,997	0,70	3,922	2,006	2,579	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	223,48	136.546,57	3.278.710,60	6.135.553,87	613.555,39	6.749.109,26
70,766	18,044	8,995	6,997	0,71	3,922	2,006	2,579	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	223,48	136.546,57	3.278.710,60	6.134.639,38	613.463,94	6.748.103,32

70,766	18,544	8,752	6,809	0,68	3,816	2,119	2,724	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	226,56	138.425,52	3.280.589,56	6.139.261,81	613.926,18	6.753.187,99
70,766	18,544	8,752	6,809	0,69	3,816	2,119	2,724	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	226,56	138.425,52	3.280.589,56	6.138.347,32	613.834,73	6.752.182,05
70,766	18,544	8,752	6,809	0,70	3,816	2,119	2,724	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	226,56	138.425,52	3.280.589,56	6.137.432,83	613.743,28	6.751.176,11
70,766	18,544	8,752	6,809	0,71	3,816	2,119	2,724	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	226,56	138.425,52	3.280.589,56	6.136.518,33	613.651,83	6.750.170,17
70,766	19,044	8,522	6,630	0,68	3,716	2,235	2,872	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	229,59	140.279,31	3.282.443,35	6.141.115,60	614.111,56	6.755.227,16
70,766	19,044	8,522	6,630	0,69	3,716	2,235	2,872	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	229,59	140.279,31	3.282.443,35	6.140.201,11	614.020,11	6.754.221,22
70,766	19,044	8,522	6,630	0,70	3,716	2,235	2,872	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	229,59	140.279,31	3.282.443,35	6.139.286,62	613.928,66	6.753.215,28
70,766	19,044	8,522	6,630	0,71	3,716	2,235	2,872	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	229,59	140.279,31	3.282.443,35	6.138.372,12	613.837,21	6.752.209,34
70,766	19,544	8,304	6,460	0,68	3,621	2,353	3,025	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	232,58	142.108,92	3.284.272,95	6.142.945,21	614.294,52	6.757.239,73
70,766	19,544	8,304	6,460	0,69	3,621	2,353	3,025	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	232,58	142.108,92	3.284.272,95	6.142.030,72	614.203,07	6.756.233,79
70,766	19,544	8,304	6,460	0,70	3,621	2,353	3,025	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	232,58	142.108,92	3.284.272,95	6.141.116,23	614.111,62	6.755.227,85
70,766	19,544	8,304	6,460	0,71	3,621	2,353	3,025	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	232,58	142.108,92	3.284.272,95	6.140.201,73	614.020,17	6.754.221,91
70,766	20,044	8,097	6,299	0,68	3,531	2,475	3,182	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	235,54	143.915,27	3.286.079,31	6.144.751,56	614.475,16	6.759.226,72
70,766	20,044	8,097	6,299	0,69	3,531	2,475	3,182	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	235,54	143.915,27	3.286.079,31	6.143.837,07	614.383,71	6.758.220,78
70,766	20,044	8,097	6,299	0,70	3,531	2,475	3,182	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	235,54	143.915,27	3.286.079,31	6.142.922,58	614.292,26	6.757.214,83
70,766	20,044	8,097	6,299	0,71	3,531	2,475	3,182	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	235,54	143.915,27	3.286.079,31	6.142.008,08	614.200,81	6.756.208,89
70,766	20,544	7,900	6,146	0,68	3,445	2,600	3,343	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	238,46	145.699,23	3.287.863,26	6.146.535,52	614.653,55	6.761.189,07
70,766	20,544	7,900	6,146	0,69	3,445	2,600	3,343	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	238,46	145.699,23	3.287.863,26	6.145.621,03	614.562,10	6.760.183,13
70,766	20,544	7,900	6,146	0,70	3,445	2,600	3,343	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	238,46	145.699,23	3.287.863,26	6.144.706,54	614.470,65	6.759.177,19
70,766	20,544	7,900	6,146	0,71	3,445	2,600	3,343	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	238,46	145.699,23	3.287.863,26	6.143.792,04	614.379,20	6.758.171,25
70,766	21,044	7,712	6,000	0,68	3,363	2,729	3,507	0,801	NO	2,55	0,89	0,77	0,87	0,64	1.125,77	832.291,05	##########	##########	########	241,34	147.461,61	3.289.625,64	6.148.297,90	614.829,79	6.763.127,69
70,766	21,044	7,712	6,000	0,69	3,363	2,729	3,507	0,801	NO	2,55	0,89	0,78	0,87	0,78	1.125,41	832.024,80	##########	##########	########	241,34	147.461,61	3.289.625,64	6.147.383,41	614.738,34	6.762.121,75
70,766	21,044	7,712	6,000	0,70	3,363	2,729	3,507	0,801	NO	2,55	0,89	0,79	0,88	0,92	1.125,05	831.758,55	##########	##########	########	241,34	147.461,61	3.289.625,64	6.146.468,91	614.646,89	6.761.115,80
70,766	21,044	7,712	6,000	0,71	3,363	2,729	3,507	0,801	NO	2,55	0,89	0,80	0,88	1,07	1.124,69	831.492,30	##########	##########	########	241,34	147.461,61	3.289.625,64	6.145.554,42	614.555,44	6.760.109,86
71,266	17,544	9,186	7,146	0,68	4,062	1,910	2,455	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	221,92	135.592,71	3.277.756,74	6.149.159,43	614.915,94	6.764.075,38
71,266	17,544	9,186	7,146	0,69	4,062	1,910	2,455	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	221,92	135.592,71	3.277.756,74	6.148.240,87	614.824,09	6.763.064,96
71,266	17,544	9,186	7,146	0,70	4,062	1,910	2,455	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	221,92	135.592,71	3.277.756,74	6.147.322,31	614.732,23	6.762.054,54
71,266	17,544	9,186	7,146	0,71	4,062	1,910	2,455	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	221,92	135.592,71	3.277.756,74	6.146.403,74	614.640,37	6.761.044,11
71,266	18,044	8,931	6,948	0,68	3,950	2,020	2,597	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	225,06	137.511,34	3.279.675,38	6.151.078,07	615.107,81	6.766.185,88
71,266	18,044	8,931	6,948	0,69	3,950	2,020	2,597	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	225,06	137.511,34	3.279.675,38	6.150.159,50	615.015,95	6.765.175,46
71,266	18,044	8,931	6,948	0,70	3,950	2,020	2,597	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	225,06	137.511,34	3.279.675,38	6.149.240,94	614.924,09	6.764.165,03
71,266	18,044	8,931	6,948	0,71	3,950	2,020	2,597	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	225,06	137.511,34	3.279.675,38	6.148.322,38	614.832,24	6.763.154,61
71,266	18,544	8,691	6,761	0,68	3,843	2,134	2,743	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	228,16	139.403,57	3.281.567,61	6.152.970,30	615.297,03	6.768.267,33
71,266	18,544	8,691	6,761	0,69	3,843	2,134	2,743	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	228,16	139.403,57	3.281.567,61	6.152.051,74	615.205,17	6.767.256,91
71,266	18,544	8,691	6,761	0,70	3,843	2,134	2,743	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	228,16	139.403,57	3.281.567,61	6.151.133,17	615.113,32	6.766.246,49
71,266	18,544	8,691	6,761	0,71	3,843	2,134	2,743	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	228,16	139.403,57	3.281.567,61	6.150.214,61	615.021,46	6.765.236,07
71,266	19,044	8,462	6,583	0,68	3,742	2,250	2,893	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	231,21	141.270,46	3.283.434,49	6.154.837,19	615.483,72	6.770.320,91
71,266	19,044	8,462	6,583	0,69	3,742	2,250	2,893	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	231,21	141.270,46	3.283.434,49	6.153.918,62	615.391,86	6.769.310,49
71,266	19,044	8,462	6,583	0,70	3,742	2,250	2,893	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	231,21	141.270,46	3.283.434,49	6.153.000,06	615.300,01	6.768.300,06
71,266	19,044	8,462	6,583	0,71	3,742	2,250	2,893	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	231,21	141.270,46	3.283.434,49	6.152.081,49	615.208,15	6.767.289,64
71,266	19,544	8,246	6,415	0,68	3,646	2,370	3,047	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	234,23	143.113,00	3.285.277,03	6.156.679,73	615.667,97	6.772.347,70
71,266	19,544	8,246	6,415	0,69	3,646	2,370	3,047	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	234,23	143.113,00	3.285.277,03	6.155.761,16	615.576,12	6.771.337,28
71,266	19,544	8,246	6,415	0,70	3,646	2,370	3,047	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	234,23	143.113,00	3.285.277,03	6.154.842,60	615.484,26	6.770.326,85
71,266	19,544	8,246	6,415	0,71	3,646	2,370	3,047	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	234,23	143.113,00	3.285.277,03	6.153.924,03	615.392,40	6.769.316,43
71,266	20,044	8,040	6,255	0,68	3,556	2,493	3,204	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	237,20	144.932,11	3.287.096,15	6.158.498,84	615.849,88	6.774.348,72
71,266	20,044	8,040	6,255	0,69	3,556	2,493	3,204	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	237,20	144.932,11	3.287.096,15	6.157.580,27	615.758,03	6.773.338,30
71,266	20,044	8,040	6,255	0,70	3,556	2,493	3,204	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	237,20	144.932,11	3.287.096,15	6.156.661,71	615.666,17	6.772.327,88

ANEXO 2: TABLA CIFRA DE MÉRITO / CUADERNO 1

DIEGO JESÚS BELLIDO TRUJILLO

71,266	20,044	8,040	6,255	0,71	3,556	2,493	3,204	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	237,20	144.932,11	3.287.096,15	6.155.743,14	615.574,31	6.771.317,46
71,266	20,544	7,845	6,103	0,68	3,469	2,619	3,366	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	240,15	146.728,68	3.288.892,71	6.160.295,40	616.029,54	6.776.324,94
71,266	20,544	7,845	6,103	0,69	3,469	2,619	3,366	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	240,15	146.728,68	3.288.892,71	6.159.376,84	615.937,68	6.775.314,52
71,266	20,544	7,845	6,103	0,70	3,469	2,619	3,366	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	240,15	146.728,68	3.288.892,71	6.158.458,27	615.845,83	6.774.304,10
71,266	20,544	7,845	6,103	0,71	3,469	2,619	3,366	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	240,15	146.728,68	3.288.892,71	6.157.539,71	615.753,97	6.773.293,68
71,266	21,044	7,658	5,958	0,68	3,387	2,748	3,532	0,801	NO	2,54	0,89	0,77	0,87	0,64	1.130,78	835.997,47	##########	##########	########	243,05	148.503,51	3.290.667,54	6.162.070,23	616.207,02	6.778.277,26
71,266	21,044	7,658	5,958	0,69	3,387	2,748	3,532	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.130,42	835.730,03	##########	##########	########	243,05	148.503,51	3.290.667,54	6.161.151,67	616.115,17	6.777.266,83
71,266	21,044	7,658	5,958	0,70	3,387	2,748	3,532	0,801	NO	2,54	0,89	0,79	0,88	0,93	1.130,06	835.462,59	##########	##########	########	243,05	148.503,51	3.290.667,54	6.160.233,10	616.023,31	6.776.256,41
71,266	21,044	7,658	5,958	0,71	3,387	2,748	3,532	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.129,70	835.195,16	##########	##########	########	243,05	148.503,51	3.290.667,54	6.159.314,54	615.931,45	6.775.245,99
71,766	17,544	9,122	7,097	0,68	4,091	1,923	2,472	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	223,48	136.544,02	3.278.708,06	6.162.808,28	616.280,83	6.779.089,11
71,766	17,544	9,122	7,097	0,69	4,091	1,923	2,472	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	223,48	136.544,02	3.278.708,06	6.161.885,65	616.188,57	6.778.074,22
71,766	17,544	9,122	7,097	0,70	4,091	1,923	2,472	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	223,48	136.544,02	3.278.708,06	6.160.963,03	616.096,30	6.777.059,33
71,766	17,544	9,122	7,097	0,71	4,091	1,923	2,472	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	223,48	136.544,02	3.278.708,06	6.160.040,40	616.004,04	6.776.044,44
71,766	18,044	8,869	6,900	0,68	3,977	2,034	2,615	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	226,64	138.476,12	3.280.640,15	6.164.740,38	616.474,04	6.781.214,41
71,766	18,044	8,869	6,900	0,69	3,977	2,034	2,615	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	226,64	138.476,12	3.280.640,15	6.163.817,75	616.381,78	6.780.199,53
71,766	18,044	8,869	6,900	0,70	3,977	2,034	2,615	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	226,64	138.476,12	3.280.640,15	6.162.895,12	616.289,51	6.779.184,64
71,766	18,044	8,869	6,900	0,71	3,977	2,034	2,615	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	226,64	138.476,12	3.280.640,15	6.161.972,50	616.197,25	6.778.169,75
71,766	18,544	8,630	6,714	0,68	3,870	2,149	2,762	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	229,76	140.381,62	3.282.545,66	6.166.645,88	616.664,59	6.783.310,47
71,766	18,544	8,630	6,714	0,69	3,870	2,149	2,762	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	229,76	140.381,62	3.282.545,66	6.165.723,26	616.572,33	6.782.295,58
71,766	18,544	8,630	6,714	0,70	3,870	2,149	2,762	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	229,76	140.381,62	3.282.545,66	6.164.800,63	616.480,06	6.781.280,69
71,766	18,544	8,630	6,714	0,71	3,870	2,149	2,762	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	229,76	140.381,62	3.282.545,66	6.163.878,00	616.387,80	6.780.265,80
71,766	19,044	8,403	6,538	0,68	3,768	2,266	2,913	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	232,83	142.261,61	3.284.425,64	6.168.525,87	616.852,59	6.785.378,46
71,766	19,044	8,403	6,538	0,69	3,768	2,266	2,913	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	232,83	142.261,61	3.284.425,64	6.167.603,24	616.760,32	6.784.363,57
71,766	19,044	8,403	6,538	0,70	3,768	2,266	2,913	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	232,83	142.261,61	3.284.425,64	6.166.680,62	616.668,06	6.783.348,68
71,766	19,044	8,403	6,538	0,71	3,768	2,266	2,913	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	232,83	142.261,61	3.284.425,64	6.165.757,99	616.575,80	6.782.333,79
71,766	19,544	8,188	6,370	0,68	3,672	2,387	3,068	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	235,87	144.117,07	3.286.281,11	6.170.381,33	617.038,13	6.787.419,47
71,766	19,544	8,188	6,370	0,69	3,672	2,387	3,068	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	235,87	144.117,07	3.286.281,11	6.169.458,71	616.945,87	6.786.404,58
71,766	19,544	8,188	6,370	0,70	3,672	2,387	3,068	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	235,87	144.117,07	3.286.281,11	6.168.536,08	616.853,61	6.785.389,69
71,766	19,544	8,188	6,370	0,71	3,672	2,387	3,068	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	235,87	144.117,07	3.286.281,11	6.167.613,45	616.761,35	6.784.374,80
71,766	20,044	7,984	6,211	0,68	3,580	2,510	3,227	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	238,87	145.948,95	3.288.112,98	6.172.213,21	617.221,32	6.789.434,53
71,766	20,044	7,984	6,211	0,69	3,580	2,510	3,227	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	238,87	145.948,95	3.288.112,98	6.171.290,58	617.129,06	6.788.419,64
71,766	20,044	7,984	6,211	0,70	3,580	2,510	3,227	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	238,87	145.948,95	3.288.112,98	6.170.367,96	617.036,80	6.787.404,75
71,766	20,044	7,984	6,211	0,71	3,580	2,510	3,227	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	238,87	145.948,95	3.288.112,98	6.169.445,33	616.944,53	6.786.389,86
71,766	20,544	7,790	6,060	0,68	3,493	2,637	3,390	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	241,83	147.758,12	3.289.922,15	6.174.022,38	617.402,24	6.791.424,62
71,766	20,544	7,790	6,060	0,69	3,493	2,637	3,390	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	241,83	147.758,12	3.289.922,15	6.173.099,75	617.309,98	6.790.409,73
71,766	20,544	7,790	6,060	0,70	3,493	2,637	3,390	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	241,83	147.758,12	3.289.922,15	6.172.177,12	617.217,71	6.789.394,84
71,766	20,544	7,790	6,060	0,71	3,493	2,637	3,390	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	241,83	147.758,12	3.289.922,15	6.171.254,50	617.125,45	6.788.379,95
71,766	21,044	7,605	5,916	0,68	3,410	2,767	3,557	0,801	NO	2,54	0,89	0,77	0,87	0,65	1.135,78	839.694,30	##########	##########	########	244,76	149.545,40	3.291.709,43	6.175.809,66	617.580,97	6.793.390,63
71,766	21,044	7,605	5,916	0,69	3,410	2,767	3,557	0,801	NO	2,54	0,89	0,78	0,87	0,79	1.135,42	839.425,68	##########	##########	########	244,76	149.545,40	3.291.709,43	6.174.887,03	617.488,70	6.792.375,74
71,766	21,044	7,605	5,916	0,70	3,410	2,767	3,557	0,801	NO	2,54	0,89	0,79	0,88	0,94	1.135,05	839.157,06	##########	##########	########	244,76	149.545,40	3.291.709,43	6.173.964,41	617.396,44	6.791.360,85
71,766	21,044	7,605	5,916	0,71	3,410	2,767	3,557	0,801	NO	2,54	0,89	0,80	0,88	1,08	1.134,69	838.888,44	##########	##########	########	244,76	149.545,40	3.291.709,43	6.173.041,78	617.304,18	6.790.345,96
72,266	17,544	9,059	7,047	0,68	4,119	1,937	2,489	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	225,03	137.495,34	3.279.659,37	6.176.424,53	617.642,45	6.794.066,99
72,266	17,544	9,059	7,047	0,69	4,119	1,937	2,489	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	225,03	137.495,34	3.279.659,37	6.175.497,86	617.549,79	6.793.047,64
72,266	17,544	9,059	7,047	0,70	4,119	1,937	2,489	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	225,03	137.495,34	3.279.659,37	6.174.571,18	617.457,12	6.792.028,30
72,266	17,544	9,059	7,047	0,71	4,119	1,937	2,489	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	225,03	137.495,34	3.279.659,37	6.173.644,50	617.364,45	6.791.008,95
72,266	18,044	8,808	6,852	0,68	4,005	2,049	2,633	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	228,22	139.440,89	3.281.604,93	6.178.370,09	617.837,01	6.796.207,10
72,266	18,044	8,808	6,852	0,69	4,005	2,049	2,633	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	228,22	139.440,89	3.281.604,93	6.177.443,41	617.744,34	6.795.187,75

72,266	18,044	8,808	6,852	0,70	4,005	2,049	2,633	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	228,22	139.440,89	3.281.604,93	6.176.516,73	617.651,67	6.794.168,41
72,266	18,044	8,808	6,852	0,71	4,005	2,049	2,633	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	228,22	139.440,89	3.281.604,93	6.175.590,06	617.559,01	6.793.149,06
72,266	18,544	8,570	6,667	0,68	3,897	2,164	2,781	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	231,36	141.359,68	3.283.523,71	6.180.288,87	618.028,89	6.798.317,76
72,266	18,544	8,570	6,667	0,69	3,897	2,164	2,781	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	231,36	141.359,68	3.283.523,71	6.179.362,20	617.936,22	6.797.298,41
72,266	18,544	8,570	6,667	0,70	3,897	2,164	2,781	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	231,36	141.359,68	3.283.523,71	6.178.435,52	617.843,55	6.796.279,07
72,266	18,544	8,570	6,667	0,71	3,897	2,164	2,781	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	231,36	141.359,68	3.283.523,71	6.177.508,84	617.750,88	6.795.259,72
72,266	19,044	8,345	6,492	0,68	3,795	2,282	2,933	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	234,46	143.252,76	3.285.416,79	6.182.181,96	618.218,20	6.800.400,15
72,266	19,044	8,345	6,492	0,69	3,795	2,282	2,933	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	234,46	143.252,76	3.285.416,79	6.181.255,28	618.125,53	6.799.380,81
72,266	19,044	8,345	6,492	0,70	3,795	2,282	2,933	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	234,46	143.252,76	3.285.416,79	6.180.328,60	618.032,86	6.798.361,46
72,266	19,044	8,345	6,492	0,71	3,795	2,282	2,933	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	234,46	143.252,76	3.285.416,79	6.179.401,92	617.940,19	6.797.342,11
72,266	19,544	8,132	6,326	0,68	3,698	2,403	3,089	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	237,51	145.121,15	3.287.285,18	6.184.050,35	618.405,03	6.802.455,38
72,266	19,544	8,132	6,326	0,69	3,698	2,403	3,089	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	237,51	145.121,15	3.287.285,18	6.183.123,67	618.312,37	6.801.436,04
72,266	19,544	8,132	6,326	0,70	3,698	2,403	3,089	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	237,51	145.121,15	3.287.285,18	6.182.196,99	618.219,70	6.800.416,69
72,266	19,544	8,132	6,326	0,71	3,698	2,403	3,089	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	237,51	145.121,15	3.287.285,18	6.181.270,31	618.127,03	6.799.397,34
72,266	20,044	7,929	6,168	0,68	3,605	2,528	3,249	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	240,53	146.965,79	3.289.129,82	6.185.894,99	618.589,50	6.804.484,49
72,266	20,044	7,929	6,168	0,69	3,605	2,528	3,249	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	240,53	146.965,79	3.289.129,82	6.184.968,31	618.496,83	6.803.465,14
72,266	20,044	7,929	6,168	0,70	3,605	2,528	3,249	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	240,53	146.965,79	3.289.129,82	6.184.041,63	618.404,16	6.802.445,79
72,266	20,044	7,929	6,168	0,71	3,605	2,528	3,249	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	240,53	146.965,79	3.289.129,82	6.183.114,95	618.311,50	6.801.426,45
72,266	20,544	7,736	6,018	0,68	3,518	2,656	3,414	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	243,51	148.787,56	3.290.951,60	6.187.716,76	618.771,68	6.806.488,44
72,266	20,544	7,736	6,018	0,69	3,518	2,656	3,414	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	243,51	148.787,56	3.290.951,60	6.186.790,08	618.679,01	6.805.469,09
72,266	20,544	7,736	6,018	0,70	3,518	2,656	3,414	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	243,51	148.787,56	3.290.951,60	6.185.863,40	618.586,34	6.804.449,74
72,266	20,544	7,736	6,018	0,71	3,518	2,656	3,414	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	243,51	148.787,56	3.290.951,60	6.184.936,73	618.493,67	6.803.430,40
72,266	21,044	7,552	5,875	0,68	3,434	2,786	3,582	0,801	NO	2,53	0,89	0,77	0,87	0,65	1.140,77	843.381,65	##########	##########	########	246,46	150.587,30	3.292.751,33	6.189.516,50	618.951,65	6.808.468,14
72,266	21,044	7,552	5,875	0,69	3,434	2,786	3,582	0,801	NO	2,53	0,89	0,78	0,87	0,80	1.140,40	843.111,85	##########	##########	########	246,46	150.587,30	3.292.751,33	6.188.589,82	618.858,98	6.807.448,80
72,266	21,044	7,552	5,875	0,70	3,434	2,786	3,582	0,801	NO	2,53	0,89	0,79	0,88	0,94	1.140,04	842.842,05	##########	##########	########	246,46	150.587,30	3.292.751,33	6.187.663,14	618.766,31	6.806.429,45
72,266	21,044	7,552	5,875	0,71	3,434	2,786	3,582	0,801	NO	2,53	0,89	0,80	0,88	1,09	1.139,67	842.572,25	##########	##########	########	246,46	150.587,30	3.292.751,33	6.186.736,46	618.673,65	6.805.410,11
72,766	17,544	8,997	6,999	0,68	4,148	1,950	2,507	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	226,59	138.446,65	3.280.610,68	6.190.008,50	619.000,85	6.809.009,35
72,766	17,544	8,997	6,999	0,69	4,148	1,950	2,507	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	226,59	138.446,65	3.280.610,68	6.189.077,78	618.907,78	6.807.985,56
72,766	17,544	8,997	6,999	0,70	4,148	1,950	2,507	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	226,59	138.446,65	3.280.610,68	6.188.147,06	618.814,71	6.806.961,77
72,766	17,544	8,997	6,999	0,71	4,148	1,950	2,507	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	226,59	138.446,65	3.280.610,68	6.187.216,34	618.721,63	6.805.937,98
72,766	18,044	8,747	6,805	0,68	4,033	2,063	2,652	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	229,80	140.405,67	3.282.569,70	6.191.967,52	619.196,75	6.811.164,27
72,766	18,044	8,747	6,805	0,69	4,033	2,063	2,652	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	229,80	140.405,67	3.282.569,70	6.191.036,80	619.103,68	6.810.140,48
72,766	18,044	8,747	6,805	0,70	4,033	2,063	2,652	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	229,80	140.405,67	3.282.569,70	6.190.106,08	619.010,61	6.809.116,69
72,766	18,044	8,747	6,805	0,71	4,033	2,063	2,652	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	229,80	140.405,67	3.282.569,70	6.189.175,36	618.917,54	6.808.092,90
72,766	18,544	8,511	6,622	0,68	3,924	2,179	2,801	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	232,96	142.337,73	3.284.501,76	6.193.899,58	619.389,96	6.813.289,54
72,766	18,544	8,511	6,622	0,69	3,924	2,179	2,801	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	232,96	142.337,73	3.284.501,76	6.192.968,86	619.296,89	6.812.265,75
72,766	18,544	8,511	6,622	0,70	3,924	2,179	2,801	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	232,96	142.337,73	3.284.501,76	6.192.038,14	619.203,81	6.811.241,95
72,766	18,544	8,511	6,622	0,71	3,924	2,179	2,801	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	232,96	142.337,73	3.284.501,76	6.191.107,42	619.110,74	6.810.218,16
72,766	19,044	8,288	6,448	0,68	3,821	2,298	2,954	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	236,08	144.243,91	3.286.407,94	6.195.805,76	619.580,58	6.815.386,34
72,766	19,044	8,288	6,448	0,69	3,821	2,298	2,954	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	236,08	144.243,91	3.286.407,94	6.194.875,04	619.487,50	6.814.362,55
72,766	19,044	8,288	6,448	0,70	3,821	2,298	2,954	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	236,08	144.243,91	3.286.407,94	6.193.944,32	619.394,43	6.813.338,75
72,766	19,044	8,288	6,448	0,71	3,821	2,298	2,954	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	236,08	144.243,91	3.286.407,94	6.193.013,60	619.301,36	6.812.314,96
72,766	19,544	8,076	6,283	0,68	3,723	2,420	3,111	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	239,16	146.125,23	3.288.289,26	6.197.687,08	619.768,71	6.817.455,79
72,766	19,544	8,076	6,283	0,69	3,723	2,420	3,111	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	239,16	146.125,23	3.288.289,26	6.196.756,36	619.675,64	6.816.432,00
72,766	19,544	8,076	6,283	0,70	3,723	2,420	3,111	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	239,16	146.125,23	3.288.289,26	6.195.825,64	619.582,56	6.815.408,20
72,766	19,544	8,076	6,283	0,71	3,723	2,420	3,111	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	239,16	146.125,23	3.288.289,26	6.194.894,92	619.489,49	6.814.384,41
72,766	20,044	7,875	6,126	0,68	3,630	2,545	3,272	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	242,20	147.982,63	3.290.146,66	6.199.544,48	619.954,45	6.819.498,93

72,766	20,044	7,875	6,126	0,69	3,630	2,545	3,272	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	242,20	147.982,63	3.290.146,66	6.198.613,76	619.861,38	6.818.475,14
72,766	20,044	7,875	6,126	0,70	3,630	2,545	3,272	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	242,20	147.982,63	3.290.146,66	6.197.683,04	619.768,30	6.817.451,35
72,766	20,044	7,875	6,126	0,71	3,630	2,545	3,272	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	242,20	147.982,63	3.290.146,66	6.196.752,32	619.675,23	6.816.427,56
72,766	20,544	7,683	5,977	0,68	3,542	2,674	3,437	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	245,20	149.817,01	3.291.981,04	6.201.378,86	620.137,89	6.821.516,74
72,766	20,544	7,683	5,977	0,69	3,542	2,674	3,437	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	245,20	149.817,01	3.291.981,04	6.200.448,14	620.044,81	6.820.492,95
72,766	20,544	7,683	5,977	0,70	3,542	2,674	3,437	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	245,20	149.817,01	3.291.981,04	6.199.517,42	619.951,74	6.819.469,16
72,766	20,544	7,683	5,977	0,71	3,542	2,674	3,437	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	245,20	149.817,01	3.291.981,04	6.198.586,70	619.858,67	6.818.445,37
72,766	21,044	7,500	5,835	0,68	3,458	2,806	3,607	0,801	NO	2,52	0,89	0,77	0,87	0,66	1.145,74	847.059,60	##########	##########	########	248,17	151.629,19	3.293.793,23	6.203.191,05	620.319,10	6.823.510,15
72,766	21,044	7,500	5,835	0,69	3,458	2,806	3,607	0,801	NO	2,52	0,89	0,78	0,87	0,80	1.145,38	846.788,62	##########	##########	########	248,17	151.629,19	3.293.793,23	6.202.260,33	620.226,03	6.822.486,36
72,766	21,044	7,500	5,835	0,70	3,458	2,806	3,607	0,801	NO	2,52	0,89	0,79	0,88	0,95	1.145,01	846.517,64	##########	##########	########	248,17	151.629,19	3.293.793,23	6.201.329,61	620.132,96	6.821.462,57
72,766	21,044	7,500	5,835	0,71	3,458	2,806	3,607	0,801	NO	2,52	0,89	0,80	0,88	1,10	1.144,64	846.246,67	##########	##########	########	248,17	151.629,19	3.293.793,23	6.200.398,89	620.039,89	6.820.438,77
73,266	17,544	8,935	6,951	0,68	4,176	1,963	2,524	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	228,15	139.397,96	3.281.562,00	6.203.560,49	620.356,05	6.823.916,54
73,266	17,544	8,935	6,951	0,69	4,176	1,963	2,524	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	228,15	139.397,96	3.281.562,00	6.202.625,74	620.262,57	6.822.888,31
73,266	17,544	8,935	6,951	0,70	4,176	1,963	2,524	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	228,15	139.397,96	3.281.562,00	6.201.690,99	620.169,10	6.821.860,09
73,266	17,544	8,935	6,951	0,71	4,176	1,963	2,524	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	228,15	139.397,96	3.281.562,00	6.200.756,24	620.075,62	6.820.831,86
73,266	18,044	8,688	6,759	0,68	4,060	2,077	2,670	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	231,38	141.370,44	3.283.534,48	6.205.532,97	620.553,30	6.826.086,27
73,266	18,044	8,688	6,759	0,69	4,060	2,077	2,670	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	231,38	141.370,44	3.283.534,48	6.204.598,22	620.459,82	6.825.058,04
73,266	18,044	8,688	6,759	0,70	4,060	2,077	2,670	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	231,38	141.370,44	3.283.534,48	6.203.663,47	620.366,35	6.824.029,81
73,266	18,044	8,688	6,759	0,71	4,060	2,077	2,670	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	231,38	141.370,44	3.283.534,48	6.202.728,72	620.272,87	6.823.001,59
73,266	18,544	8,453	6,576	0,68	3,951	2,194	2,820	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	234,56	143.315,78	3.285.479,81	6.207.478,30	620.747,83	6.828.226,13
73,266	18,544	8,453	6,576	0,69	3,951	2,194	2,820	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	234,56	143.315,78	3.285.479,81	6.206.543,55	620.654,36	6.827.197,91
73,266	18,544	8,453	6,576	0,70	3,951	2,194	2,820	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	234,56	143.315,78	3.285.479,81	6.205.608,80	620.560,88	6.826.169,68
73,266	18,544	8,453	6,576	0,71	3,951	2,194	2,820	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	234,56	143.315,78	3.285.479,81	6.204.674,05	620.467,41	6.825.141,46
73,266	19,044	8,231	6,404	0,68	3,847	2,314	2,974	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	237,70	145.235,06	3.287.399,09	6.209.397,58	620.939,76	6.830.337,34
73,266	19,044	8,231	6,404	0,69	3,847	2,314	2,974	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	237,70	145.235,06	3.287.399,09	6.208.462,83	620.846,28	6.829.309,12
73,266	19,044	8,231	6,404	0,70	3,847	2,314	2,974	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	237,70	145.235,06	3.287.399,09	6.207.528,08	620.752,81	6.828.280,89
73,266	19,044	8,231	6,404	0,71	3,847	2,314	2,974	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	237,70	145.235,06	3.287.399,09	6.206.593,33	620.659,33	6.827.252,66
73,266	19,544	8,021	6,240	0,68	3,749	2,437	3,132	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	240,80	147.129,30	3.289.293,34	6.211.291,83	621.129,18	6.832.421,01
73,266	19,544	8,021	6,240	0,69	3,749	2,437	3,132	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	240,80	147.129,30	3.289.293,34	6.210.357,08	621.035,71	6.831.392,79
73,266	19,544	8,021	6,240	0,70	3,749	2,437	3,132	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	240,80	147.129,30	3.289.293,34	6.209.422,33	620.942,23	6.830.364,56
73,266	19,544	8,021	6,240	0,71	3,749	2,437	3,132	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	240,80	147.129,30	3.289.293,34	6.208.487,58	620.848,76	6.829.336,33
73,266	20,044	7,821	6,084	0,68	3,655	2,563	3,294	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	243,86	148.999,47	3.291.163,50	6.213.161,99	621.316,20	6.834.478,19
73,266	20,044	7,821	6,084	0,69	3,655	2,563	3,294	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	243,86	148.999,47	3.291.163,50	6.212.227,24	621.222,72	6.833.449,97
73,266	20,044	7,821	6,084	0,70	3,655	2,563	3,294	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	243,86	148.999,47	3.291.163,50	6.211.292,49	621.129,25	6.832.421,74
73,266	20,044	7,821	6,084	0,71	3,655	2,563	3,294	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	243,86	148.999,47	3.291.163,50	6.210.357,74	621.035,77	6.831.393,52
73,266	20,544	7,630	5,936	0,68	3,566	2,692	3,461	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	246,88	150.846,45	3.293.010,48	6.215.008,97	621.500,90	6.836.509,87
73,266	20,544	7,630	5,936	0,69	3,566	2,692	3,461	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	246,88	150.846,45	3.293.010,48	6.214.074,22	621.407,42	6.835.481,65
73,266	20,544	7,630	5,936	0,70	3,566	2,692	3,461	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	246,88	150.846,45	3.293.010,48	6.213.139,47	621.313,95	6.834.453,42
73,266	20,544	7,630	5,936	0,71	3,566	2,692	3,461	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	246,88	150.846,45	3.293.010,48	6.212.204,72	621.220,47	6.833.425,20
73,266	21,044	7,449	5,795	0,68	3,482	2,825	3,631	0,801	NO	2,51	0,89	0,77	0,87	0,66	1.150,71	850.728,23	##########	##########	########	249,87	152.671,09	3.294.835,12	6.216.833,61	621.683,36	6.838.516,98
73,266	21,044	7,449	5,795	0,69	3,482	2,825	3,631	0,801	NO	2,51	0,89	0,78	0,87	0,81	1.150,34	850.456,08	##########	##########	########	249,87	152.671,09	3.294.835,12	6.215.898,86	621.589,89	6.837.488,75
73,266	21,044	7,449	5,795	0,70	3,482	2,825	3,631	0,801	NO	2,51	0,89	0,79	0,88	0,96	1.149,97	850.183,93	##########	##########	########	249,87	152.671,09	3.294.835,12	6.214.964,11	621.496,41	6.836.460,52
73,266	21,044	7,449	5,795	0,71	3,482	2,825	3,631	0,801	NO	2,51	0,89	0,80	0,88	1,11	1.149,60	849.911,78	##########	##########	########	249,87	152.671,09	3.294.835,12	6.214.029,36	621.402,94	6.835.432,30
73,766	17,544	8,875	6,904	0,68	4,205	1,977	2,541	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	229,70	140.349,28	3.282.513,31	6.217.080,79	621.708,08	6.838.788,87
73,766	17,544	8,875	6,904	0,69	4,205	1,977	2,541	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	229,70	140.349,28	3.282.513,31	6.216.142,02	621.614,20	6.837.756,22
73,766	17,544	8,875	6,904	0,70	4,205	1,977	2,541	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	229,70	140.349,28	3.282.513,31	6.215.203,25	621.520,33	6.836.723,58
73,766	17,544	8,875	6,904	0,71	4,205	1,977	2,541	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	229,70	140.349,28	3.282.513,31	6.214.264,48	621.426,45	6.835.690,93

73,766	18,044	8,629	6,713	0,68	4,088	2,091	2,688	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	232,95	142.335,22	3.284.499,25	6.219.066,73	621.906,67	6.840.973,41
73,766	18,044	8,629	6,713	0,69	4,088	2,091	2,688	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	232,95	142.335,22	3.284.499,25	6.218.127,96	621.812,80	6.839.940,76
73,766	18,044	8,629	6,713	0,70	4,088	2,091	2,688	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	232,95	142.335,22	3.284.499,25	6.217.189,19	621.718,92	6.838.908,11
73,766	18,044	8,629	6,713	0,71	4,088	2,091	2,688	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	232,95	142.335,22	3.284.499,25	6.216.250,42	621.625,04	6.837.875,46
73,766	18,544	8,396	6,532	0,68	3,978	2,209	2,839	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	236,16	144.293,83	3.286.457,86	6.221.025,34	622.102,53	6.843.127,88
73,766	18,544	8,396	6,532	0,69	3,978	2,209	2,839	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	236,16	144.293,83	3.286.457,86	6.220.086,57	622.008,66	6.842.095,23
73,766	18,544	8,396	6,532	0,70	3,978	2,209	2,839	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	236,16	144.293,83	3.286.457,86	6.219.147,80	621.914,78	6.841.062,58
73,766	18,544	8,396	6,532	0,71	3,978	2,209	2,839	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	236,16	144.293,83	3.286.457,86	6.218.209,03	621.820,90	6.840.029,93
73,766	19,044	8,176	6,360	0,68	3,874	2,329	2,994	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	239,32	146.226,21	3.288.390,24	6.222.957,72	622.295,77	6.845.253,49
73,766	19,044	8,176	6,360	0,69	3,874	2,329	2,994	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	239,32	146.226,21	3.288.390,24	6.222.018,95	622.201,89	6.844.220,84
73,766	19,044	8,176	6,360	0,70	3,874	2,329	2,994	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	239,32	146.226,21	3.288.390,24	6.221.080,18	622.108,02	6.843.188,20
73,766	19,044	8,176	6,360	0,71	3,874	2,329	2,994	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	239,32	146.226,21	3.288.390,24	6.220.141,41	622.014,14	6.842.155,55
73,766	19,544	7,966	6,198	0,68	3,774	2,453	3,153	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	242,44	148.133,38	3.290.297,41	6.224.864,89	622.486,49	6.847.351,38
73,766	19,544	7,966	6,198	0,69	3,774	2,453	3,153	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	242,44	148.133,38	3.290.297,41	6.223.926,12	622.392,61	6.846.318,73
73,766	19,544	7,966	6,198	0,70	3,774	2,453	3,153	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	242,44	148.133,38	3.290.297,41	6.222.987,35	622.298,74	6.845.286,09
73,766	19,544	7,966	6,198	0,71	3,774	2,453	3,153	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	242,44	148.133,38	3.290.297,41	6.222.048,58	622.204,86	6.844.253,44
73,766	20,044	7,768	6,043	0,68	3,680	2,580	3,317	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	245,53	150.016,31	3.292.180,34	6.226.747,82	622.674,78	6.849.422,60
73,766	20,044	7,768	6,043	0,69	3,680	2,580	3,317	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	245,53	150.016,31	3.292.180,34	6.225.809,05	622.580,91	6.848.389,96
73,766	20,044	7,768	6,043	0,70	3,680	2,580	3,317	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	245,53	150.016,31	3.292.180,34	6.224.870,28	622.487,03	6.847.357,31
73,766	20,044	7,768	6,043	0,71	3,680	2,580	3,317	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	245,53	150.016,31	3.292.180,34	6.223.931,51	622.393,15	6.846.324,66
73,766	20,544	7,579	5,896	0,68	3,591	2,711	3,484	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	248,57	151.875,89	3.294.039,93	6.228.607,41	622.860,74	6.851.468,15
73,766	20,544	7,579	5,896	0,69	3,591	2,711	3,484	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	248,57	151.875,89	3.294.039,93	6.227.668,64	622.766,86	6.850.435,50
73,766	20,544	7,579	5,896	0,70	3,591	2,711	3,484	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	248,57	151.875,89	3.294.039,93	6.226.729,87	622.672,99	6.849.402,85
73,766	20,544	7,579	5,896	0,71	3,591	2,711	3,484	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	248,57	151.875,89	3.294.039,93	6.225.791,09	622.579,11	6.848.370,20
73,766	21,044	7,399	5,756	0,68	3,505	2,844	3,656	0,801	NO	2,50	0,89	0,77	0,87	0,67	1.155,66	854.387,64	##########	##########	########	251,58	153.712,99	3.295.877,02	6.230.444,50	623.044,45	6.853.488,95
73,766	21,044	7,399	5,756	0,69	3,505	2,844	3,656	0,801	NO	2,50	0,89	0,78	0,87	0,81	1.155,29	854.114,32	##########	##########	########	251,58	153.712,99	3.295.877,02	6.229.505,73	622.950,57	6.852.456,30
73,766	21,044	7,399	5,756	0,70	3,505	2,844	3,656	0,801	NO	2,50	0,89	0,79	0,88	0,96	1.154,92	853.841,00	##########	##########	########	251,58	153.712,99	3.295.877,02	6.228.566,96	622.856,70	6.851.423,65
73,766	21,044	7,399	5,756	0,71	3,505	2,844	3,656	0,801	NO	2,50	0,89	0,80	0,88	1,11	1.154,55	853.567,68	##########	##########	########	251,58	153.712,99	3.295.877,02	6.227.628,18	622.762,82	6.850.391,00
74,266	17,544	8,815	6,858	0,68	4,233	1,990	2,558	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	231,26	141.300,59	3.283.464,63	6.230.569,71	623.056,97	6.853.626,68
74,266	17,544	8,815	6,858	0,69	4,233	1,990	2,558	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	231,26	141.300,59	3.283.464,63	6.229.626,93	622.962,69	6.852.589,62
74,266	17,544	8,815	6,858	0,70	4,233	1,990	2,558	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	231,26	141.300,59	3.283.464,63	6.228.684,14	622.868,41	6.851.552,56
74,266	17,544	8,815	6,858	0,71	4,233	1,990	2,558	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	231,26	141.300,59	3.283.464,63	6.227.741,36	622.774,14	6.850.515,50
74,266	18,044	8,571	6,668	0,68	4,116	2,105	2,706	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	234,53	143.299,99	3.285.464,03	6.232.569,11	623.256,91	6.855.826,02
74,266	18,044	8,571	6,668	0,69	4,116	2,105	2,706	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	234,53	143.299,99	3.285.464,03	6.231.626,33	623.162,63	6.854.788,96
74,266	18,044	8,571	6,668	0,70	4,116	2,105	2,706	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	234,53	143.299,99	3.285.464,03	6.230.683,54	623.068,35	6.853.751,90
74,266	18,044	8,571	6,668	0,71	4,116	2,105	2,706	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	234,53	143.299,99	3.285.464,03	6.229.740,76	622.974,08	6.852.714,84
74,266	18,544	8,340	6,488	0,68	4,005	2,224	2,858	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	237,76	145.271,88	3.287.435,91	6.234.540,99	623.454,10	6.857.995,09
74,266	18,544	8,340	6,488	0,69	4,005	2,224	2,858	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	237,76	145.271,88	3.287.435,91	6.233.598,21	623.359,82	6.856.958,03
74,266	18,544	8,340	6,488	0,70	4,005	2,224	2,858	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	237,76	145.271,88	3.287.435,91	6.232.655,43	623.265,54	6.855.920,97
74,266	18,544	8,340	6,488	0,71	4,005	2,224	2,858	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	237,76	145.271,88	3.287.435,91	6.231.712,65	623.171,26	6.854.883,91
74,266	19,044	8,121	6,317	0,68	3,900	2,345	3,014	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	240,94	147.217,36	3.289.381,39	6.236.486,47	623.648,65	6.860.135,12
74,266	19,044	8,121	6,317	0,69	3,900	2,345	3,014	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	240,94	147.217,36	3.289.381,39	6.235.543,69	623.554,37	6.859.098,06
74,266	19,044	8,121	6,317	0,70	3,900	2,345	3,014	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	240,94	147.217,36	3.289.381,39	6.234.600,91	623.460,09	6.858.061,00
74,266	19,044	8,121	6,317	0,71	3,900	2,345	3,014	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	240,94	147.217,36	3.289.381,39	6.233.658,12	623.365,81	6.857.023,94
74,266	19,544	7,913	6,156	0,68	3,800	2,470	3,175	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	244,09	149.137,46	3.291.301,49	6.238.406,57	623.840,66	6.862.247,23
74,266	19,544	7,913	6,156	0,69	3,800	2,470	3,175	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	244,09	149.137,46	3.291.301,49	6.237.463,79	623.746,38	6.861.210,17
74,266	19,544	7,913	6,156	0,70	3,800	2,470	3,175	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	244,09	149.137,46	3.291.301,49	6.236.521,01	623.652,10	6.860.173,11

74,266	19,544	7,913	6,156	0,71	3,800	2,470	3,175	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	244,09	149.137,46	3.291.301,49	6.235.578,22	623.557,82	6.859.136,05
74,266	20,044	7,715	6,002	0,68	3,705	2,598	3,339	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	247,19	151.033,15	3.293.197,18	6.240.302,26	624.030,23	6.864.332,49
74,266	20,044	7,715	6,002	0,69	3,705	2,598	3,339	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	247,19	151.033,15	3.293.197,18	6.239.359,48	623.935,95	6.863.295,43
74,266	20,044	7,715	6,002	0,70	3,705	2,598	3,339	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	247,19	151.033,15	3.293.197,18	6.238.416,70	623.841,67	6.862.258,37
74,266	20,044	7,715	6,002	0,71	3,705	2,598	3,339	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	247,19	151.033,15	3.293.197,18	6.237.473,91	623.747,39	6.861.221,31
74,266	20,544	7,528	5,856	0,68	3,615	2,729	3,508	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	250,25	152.905,34	3.295.069,37	6.242.174,45	624.217,45	6.866.391,90
74,266	20,544	7,528	5,856	0,69	3,615	2,729	3,508	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	250,25	152.905,34	3.295.069,37	6.241.231,67	624.123,17	6.865.354,84
74,266	20,544	7,528	5,856	0,70	3,615	2,729	3,508	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	250,25	152.905,34	3.295.069,37	6.240.288,89	624.028,89	6.864.317,78
74,266	20,544	7,528	5,856	0,71	3,615	2,729	3,508	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	250,25	152.905,34	3.295.069,37	6.239.346,11	623.934,61	6.863.280,72
74,266	21,044	7,349	5,717	0,68	3,529	2,864	3,681	0,801	NO	2,49	0,89	0,77	0,87	0,67	1.160,59	858.037,91	##########	##########	########	253,28	154.754,88	3.296.918,91	6.244.024,00	624.402,40	6.868.426,39
74,266	21,044	7,349	5,717	0,69	3,529	2,864	3,681	0,801	NO	2,49	0,89	0,78	0,87	0,82	1.160,22	857.763,43	##########	##########	########	253,28	154.754,88	3.296.918,91	6.243.081,21	624.308,12	6.867.389,33
74,266	21,044	7,349	5,717	0,70	3,529	2,864	3,681	0,801	NO	2,49	0,89	0,79	0,88	0,97	1.159,85	857.488,94	##########	##########	########	253,28	154.754,88	3.296.918,91	6.242.138,43	624.213,84	6.866.352,27
74,266	21,044	7,349	5,717	0,71	3,529	2,864	3,681	0,801	NO	2,49	0,89	0,80	0,88	1,12	1.159,48	857.214,45	##########	##########	########	253,28	154.754,88	3.296.918,91	6.241.195,65	624.119,56	6.865.315,21
74,766	17,544	8,756	6,812	0,68	4,262	2,004	2,576	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	232,82	142.251,91	3.284.415,94	6.244.027,52	624.402,75	6.868.430,27
74,766	17,544	8,756	6,812	0,69	4,262	2,004	2,576	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	232,82	142.251,91	3.284.415,94	6.243.080,74	624.308,07	6.867.388,81
74,766	17,544	8,756	6,812	0,70	4,262	2,004	2,576	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	232,82	142.251,91	3.284.415,94	6.242.133,96	624.213,40	6.866.347,35
74,766	17,544	8,756	6,812	0,71	4,262	2,004	2,576	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	232,82	142.251,91	3.284.415,94	6.241.187,17	624.118,72	6.865.305,89
74,766	18,044	8,513	6,623	0,68	4,144	2,119	2,724	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	236,11	144.264,77	3.286.428,80	6.246.040,38	624.604,04	6.870.644,42
74,766	18,044	8,513	6,623	0,69	4,144	2,119	2,724	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	236,11	144.264,77	3.286.428,80	6.245.093,60	624.509,36	6.869.602,96
74,766	18,044	8,513	6,623	0,70	4,144	2,119	2,724	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	236,11	144.264,77	3.286.428,80	6.244.146,82	624.414,68	6.868.561,50
74,766	18,044	8,513	6,623	0,71	4,144	2,119	2,724	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	236,11	144.264,77	3.286.428,80	6.243.200,03	624.320,00	6.867.520,04
74,766	18,544	8,284	6,444	0,68	4,032	2,239	2,877	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	239,36	146.249,93	3.288.413,96	6.248.025,55	624.802,55	6.872.828,10
74,766	18,544	8,284	6,444	0,69	4,032	2,239	2,877	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	239,36	146.249,93	3.288.413,96	6.247.078,76	624.707,88	6.871.786,64
74,766	18,544	8,284	6,444	0,70	4,032	2,239	2,877	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	239,36	146.249,93	3.288.413,96	6.246.131,98	624.613,20	6.870.745,18
74,766	18,544	8,284	6,444	0,71	4,032	2,239	2,877	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	239,36	146.249,93	3.288.413,96	6.245.185,20	624.518,52	6.869.703,72
74,766	19,044	8,066	6,275	0,68	3,926	2,361	3,035	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	242,57	148.208,51	3.290.372,54	6.249.984,12	624.998,41	6.874.982,53
74,766	19,044	8,066	6,275	0,69	3,926	2,361	3,035	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	242,57	148.208,51	3.290.372,54	6.249.037,34	624.903,73	6.873.941,07
74,766	19,044	8,066	6,275	0,70	3,926	2,361	3,035	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	242,57	148.208,51	3.290.372,54	6.248.090,55	624.809,06	6.872.899,61
74,766	19,044	8,066	6,275	0,71	3,926	2,361	3,035	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	242,57	148.208,51	3.290.372,54	6.247.143,77	624.714,38	6.871.858,15
74,766	19,544	7,860	6,115	0,68	3,826	2,487	3,196	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	245,73	150.141,53	3.292.305,56	6.251.917,15	625.191,71	6.877.108,86
74,766	19,544	7,860	6,115	0,69	3,826	2,487	3,196	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	245,73	150.141,53	3.292.305,56	6.250.970,36	625.097,04	6.876.067,40
74,766	19,544	7,860	6,115	0,70	3,826	2,487	3,196	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	245,73	150.141,53	3.292.305,56	6.250.023,58	625.002,36	6.875.025,94
74,766	19,544	7,860	6,115	0,71	3,826	2,487	3,196	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	245,73	150.141,53	3.292.305,56	6.249.076,80	624.907,68	6.873.984,48
74,766	20,044	7,664	5,962	0,68	3,730	2,615	3,362	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	248,85	152.049,99	3.294.214,02	6.253.825,60	625.382,56	6.879.208,16
74,766	20,044	7,664	5,962	0,69	3,730	2,615	3,362	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	248,85	152.049,99	3.294.214,02	6.252.878,82	625.287,88	6.878.166,70
74,766	20,044	7,664	5,962	0,70	3,730	2,615	3,362	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	248,85	152.049,99	3.294.214,02	6.251.932,03	625.193,20	6.877.125,24
74,766	20,044	7,664	5,962	0,71	3,730	2,615	3,362	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	248,85	152.049,99	3.294.214,02	6.250.985,25	625.098,53	6.876.083,78
74,766	20,544	7,477	5,817	0,68	3,639	2,747	3,532	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	251,94	153.934,78	3.296.098,81	6.255.710,40	625.571,04	6.881.281,44
74,766	20,544	7,477	5,817	0,69	3,639	2,747	3,532	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	251,94	153.934,78	3.296.098,81	6.254.763,61	625.476,36	6.880.239,97
74,766	20,544	7,477	5,817	0,70	3,639	2,747	3,532	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	251,94	153.934,78	3.296.098,81	6.253.816,83	625.381,68	6.879.198,51
74,766	20,544	7,477	5,817	0,71	3,639	2,747	3,532	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	251,94	153.934,78	3.296.098,81	6.252.870,05	625.287,00	6.878.157,05
74,766	21,044	7,300	5,679	0,68	3,553	2,883	3,706	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.165,52	861.679,13	##########	##########	########	254,99	155.796,78	3.297.960,81	6.257.572,39	625.757,24	6.883.329,63
74,766	21,044	7,300	5,679	0,69	3,553	2,883	3,706	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.165,15	861.403,48	##########	##########	########	254,99	155.796,78	3.297.960,81	6.256.625,61	625.662,56	6.882.288,17
74,766	21,044	7,300	5,679	0,70	3,553	2,883	3,706	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.164,77	861.127,83	##########	##########	########	254,99	155.796,78	3.297.960,81	6.255.678,82	625.567,88	6.881.246,71
74,766	21,044	7,300	5,679	0,71	3,553	2,883	3,706	0,801	NO	2,48	0,89	0,80	0,88	1,13	1.164,40	860.852,18	##########	##########	########	254,99	155.796,78	3.297.960,81	6.254.732,04	625.473,20	6.880.205,25
75,266	17,544	8,698	6,767	0,68	4,290	2,017	2,593	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	234,38	143.203,22	3.285.367,25	6.257.454,52	625.745,45	6.883.199,97
75,266	17,544	8,698	6,767	0,69	4,290	2,017	2,593	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	234,38	143.203,22	3.285.367,25	6.256.503,74	625.650,37	6.882.154,12

75,266	17,544	8,698	6,767	0,70	4,290	2,017	2,593	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	234,38	143.203,22	3.285.367,25	6.255.552,97	625.555,30	6.881.108,27
75,266	17,544	8,698	6,767	0,71	4,290	2,017	2,593	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	234,38	143.203,22	3.285.367,25	6.254.602,20	625.460,22	6.880.062,42
75,266	18,044	8,457	6,579	0,68	4,171	2,134	2,743	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	237,69	145.229,54	3.287.393,58	6.259.480,84	625.948,08	6.885.428,93
75,266	18,044	8,457	6,579	0,69	4,171	2,134	2,743	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	237,69	145.229,54	3.287.393,58	6.258.530,07	625.853,01	6.884.383,08
75,266	18,044	8,457	6,579	0,70	4,171	2,134	2,743	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	237,69	145.229,54	3.287.393,58	6.257.579,29	625.757,93	6.883.337,22
75,266	18,044	8,457	6,579	0,71	4,171	2,134	2,743	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	237,69	145.229,54	3.287.393,58	6.256.628,52	625.662,85	6.882.291,37
75,266	18,544	8,229	6,402	0,68	4,059	2,254	2,897	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	240,96	147.227,98	3.289.392,02	6.261.479,28	626.147,93	6.887.627,21
75,266	18,544	8,229	6,402	0,69	4,059	2,254	2,897	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	240,96	147.227,98	3.289.392,02	6.260.528,51	626.052,85	6.886.581,36
75,266	18,544	8,229	6,402	0,70	4,059	2,254	2,897	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	240,96	147.227,98	3.289.392,02	6.259.577,73	625.957,77	6.885.535,50
75,266	18,544	8,229	6,402	0,71	4,059	2,254	2,897	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	240,96	147.227,98	3.289.392,02	6.258.626,96	625.862,70	6.884.489,65
75,266	19,044	8,013	6,234	0,68	3,952	2,377	3,055	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	244,19	149.199,65	3.291.363,69	6.263.450,95	626.345,10	6.889.796,05
75,266	19,044	8,013	6,234	0,69	3,952	2,377	3,055	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	244,19	149.199,65	3.291.363,69	6.262.500,18	626.250,02	6.888.750,20
75,266	19,044	8,013	6,234	0,70	3,952	2,377	3,055	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	244,19	149.199,65	3.291.363,69	6.261.549,40	626.154,94	6.887.704,34
75,266	19,044	8,013	6,234	0,71	3,952	2,377	3,055	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	244,19	149.199,65	3.291.363,69	6.260.598,63	626.059,86	6.886.658,49
75,266	19,544	7,808	6,074	0,68	3,851	2,503	3,218	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	247,37	151.145,61	3.293.309,64	6.265.396,91	626.539,69	6.891.936,60
75,266	19,544	7,808	6,074	0,69	3,851	2,503	3,218	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	247,37	151.145,61	3.293.309,64	6.264.446,13	626.444,61	6.890.890,75
75,266	19,544	7,808	6,074	0,70	3,851	2,503	3,218	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	247,37	151.145,61	3.293.309,64	6.263.495,36	626.349,54	6.889.844,89
75,266	19,544	7,808	6,074	0,71	3,851	2,503	3,218	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	247,37	151.145,61	3.293.309,64	6.262.544,58	626.254,46	6.888.799,04
75,266	20,044	7,613	5,923	0,68	3,755	2,633	3,384	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	250,52	153.066,83	3.295.230,86	6.267.318,12	626.731,81	6.894.049,94
75,266	20,044	7,613	5,923	0,69	3,755	2,633	3,384	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	250,52	153.066,83	3.295.230,86	6.266.367,35	626.636,73	6.893.004,08
75,266	20,044	7,613	5,923	0,70	3,755	2,633	3,384	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	250,52	153.066,83	3.295.230,86	6.265.416,57	626.541,66	6.891.958,23
75,266	20,044	7,613	5,923	0,71	3,755	2,633	3,384	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	250,52	153.066,83	3.295.230,86	6.264.465,80	626.446,58	6.890.912,38
75,266	20,544	7,428	5,778	0,68	3,664	2,766	3,555	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	253,62	154.964,23	3.297.128,26	6.269.215,52	626.921,55	6.896.137,08
75,266	20,544	7,428	5,778	0,69	3,664	2,766	3,555	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	253,62	154.964,23	3.297.128,26	6.268.264,75	626.826,47	6.895.091,22
75,266	20,544	7,428	5,778	0,70	3,664	2,766	3,555	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	253,62	154.964,23	3.297.128,26	6.267.313,97	626.731,40	6.894.045,37
75,266	20,544	7,428	5,778	0,71	3,664	2,766	3,555	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	253,62	154.964,23	3.297.128,26	6.266.363,20	626.636,32	6.892.999,52
75,266	21,044	7,251	5,641	0,68	3,577	2,902	3,730	0,801	NO	2,48	0,89	0,77	0,87	0,68	1.170,43	865.311,38	##########	##########	########	256,69	156.838,67	3.299.002,71	6.271.089,97	627.109,00	6.898.198,97
75,266	21,044	7,251	5,641	0,69	3,577	2,902	3,730	0,801	NO	2,48	0,89	0,78	0,87	0,83	1.170,06	865.034,56	##########	##########	########	256,69	156.838,67	3.299.002,71	6.270.139,20	627.013,92	6.897.153,12
75,266	21,044	7,251	5,641	0,70	3,577	2,902	3,730	0,801	NO	2,48	0,89	0,79	0,88	0,98	1.169,68	864.757,75	##########	##########	########	256,69	156.838,67	3.299.002,71	6.269.188,42	626.918,84	6.896.107,26
75,266	21,044	7,251	5,641	0,71	3,577	2,902	3,730	0,801	NO	2,48	0,89	0,80	0,88	1,14	1.169,31	864.480,94	##########	##########	########	256,69	156.838,67	3.299.002,71	6.268.237,65	626.823,76	6.895.061,41
75,766	17,544	8,640	6,722	0,68	4,319	2,030	2,610	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	235,93	144.154,54	3.286.318,57	6.270.850,98	627.085,10	6.897.936,08
75,766	17,544	8,640	6,722	0,69	4,319	2,030	2,610	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	235,93	144.154,54	3.286.318,57	6.269.896,22	626.989,62	6.896.885,85
75,766	17,544	8,640	6,722	0,70	4,319	2,030	2,610	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	235,93	144.154,54	3.286.318,57	6.268.941,47	626.894,15	6.895.835,62
75,766	17,544	8,640	6,722	0,71	4,319	2,030	2,610	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	235,93	144.154,54	3.286.318,57	6.267.986,71	626.798,67	6.894.785,39
75,766	18,044	8,401	6,536	0,68	4,199	2,148	2,761	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	239,27	146.194,32	3.288.358,35	6.272.890,76	627.289,08	6.900.179,84
75,766	18,044	8,401	6,536	0,69	4,199	2,148	2,761	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	239,27	146.194,32	3.288.358,35	6.271.936,01	627.193,60	6.899.129,61
75,766	18,044	8,401	6,536	0,70	4,199	2,148	2,761	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	239,27	146.194,32	3.288.358,35	6.270.981,25	627.098,13	6.898.079,38
75,766	18,044	8,401	6,536	0,71	4,199	2,148	2,761	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	239,27	146.194,32	3.288.358,35	6.270.026,50	627.002,65	6.897.029,15
75,766	18,544	8,174	6,359	0,68	4,086	2,268	2,916	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	242,56	148.206,03	3.290.370,07	6.274.902,48	627.490,25	6.902.392,73
75,766	18,544	8,174	6,359	0,69	4,086	2,268	2,916	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	242,56	148.206,03	3.290.370,07	6.273.947,72	627.394,77	6.901.342,50
75,766	18,544	8,174	6,359	0,70	4,086	2,268	2,916	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	242,56	148.206,03	3.290.370,07	6.272.992,97	627.299,30	6.900.292,26
75,766	18,544	8,174	6,359	0,71	4,086	2,268	2,916	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	242,56	148.206,03	3.290.370,07	6.272.038,21	627.203,82	6.899.242,03
75,766	19,044	7,960	6,192	0,68	3,979	2,392	3,075	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	245,81	150.190,80	3.292.354,84	6.276.887,25	627.688,72	6.904.575,97
75,766	19,044	7,960	6,192	0,69	3,979	2,392	3,075	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	245,81	150.190,80	3.292.354,84	6.275.932,49	627.593,25	6.903.525,74
75,766	19,044	7,960	6,192	0,70	3,979	2,392	3,075	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	245,81	150.190,80	3.292.354,84	6.274.977,74	627.497,77	6.902.475,51
75,766	19,044	7,960	6,192	0,71	3,979	2,392	3,075	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	245,81	150.190,80	3.292.354,84	6.274.022,98	627.402,30	6.901.425,28
75,766	19,544	7,756	6,034	0,68	3,877	2,520	3,239	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	249,02	152.149,68	3.294.313,72	6.278.846,13	627.884,61	6.906.730,74

75,766	19,544	7,756	6,034	0,69	3,877	2,520	3,239	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	249,02	152.149,68	3.294.313,72	6.277.891,37	627.789,14	6.905.680,51
75,766	19,544	7,756	6,034	0,70	3,877	2,520	3,239	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	249,02	152.149,68	3.294.313,72	6.276.936,62	627.693,66	6.904.630,28
75,766	19,544	7,756	6,034	0,71	3,877	2,520	3,239	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	249,02	152.149,68	3.294.313,72	6.275.981,86	627.598,19	6.903.580,05
75,766	20,044	7,563	5,883	0,68	3,780	2,650	3,407	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	252,18	154.083,66	3.296.247,70	6.280.780,11	628.078,01	6.908.858,12
75,766	20,044	7,563	5,883	0,69	3,780	2,650	3,407	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	252,18	154.083,66	3.296.247,70	6.279.825,35	627.982,54	6.907.807,89
75,766	20,044	7,563	5,883	0,70	3,780	2,650	3,407	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	252,18	154.083,66	3.296.247,70	6.278.870,60	627.887,06	6.906.757,66
75,766	20,044	7,563	5,883	0,71	3,780	2,650	3,407	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	252,18	154.083,66	3.296.247,70	6.277.915,84	627.791,58	6.905.707,43
75,766	20,544	7,379	5,740	0,68	3,688	2,784	3,579	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	255,31	155.993,67	3.298.157,70	6.282.690,11	628.269,01	6.910.959,13
75,766	20,544	7,379	5,740	0,69	3,688	2,784	3,579	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	255,31	155.993,67	3.298.157,70	6.281.735,36	628.173,54	6.909.908,89
75,766	20,544	7,379	5,740	0,70	3,688	2,784	3,579	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	255,31	155.993,67	3.298.157,70	6.280.780,60	628.078,06	6.908.858,66
75,766	20,544	7,379	5,740	0,71	3,688	2,784	3,579	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	255,31	155.993,67	3.298.157,70	6.279.825,85	627.982,58	6.907.808,43
75,766	21,044	7,203	5,604	0,68	3,600	2,921	3,755	0,801	NO	2,47	0,89	0,77	0,87	0,69	1.175,33	868.934,73	##########	##########	########	258,40	157.880,57	3.300.044,60	6.284.577,01	628.457,70	6.913.034,71
75,766	21,044	7,203	5,604	0,69	3,600	2,921	3,755	0,801	NO	2,47	0,89	0,78	0,87	0,84	1.174,96	868.656,76	##########	##########	########	258,40	157.880,57	3.300.044,60	6.283.622,26	628.362,23	6.911.984,48
75,766	21,044	7,203	5,604	0,70	3,600	2,921	3,755	0,801	NO	2,47	0,89	0,79	0,88	0,99	1.174,58	868.378,79	##########	##########	########	258,40	157.880,57	3.300.044,60	6.282.667,50	628.266,75	6.910.934,25
75,766	21,044	7,203	5,604	0,71	3,600	2,921	3,755	0,801	NO	2,47	0,89	0,80	0,88	1,14	1.174,20	868.100,81	##########	##########	########	258,40	157.880,57	3.300.044,60	6.281.712,75	628.171,27	6.909.884,02
76,266	17,544	8,584	6,678	0,68	4,347	2,044	2,627	0,801	NO	2,46	0,89	0,77	0,87	0,69	1.180,22	872.549,28	##########	##########	########	237,49	145.105,85	3.287.269,88	6.284.217,18	628.421,72	6.912.638,90
76,266	17,544	8,584	6,678	0,69	4,347	2,044	2,627	0,801	NO	2,46	0,89	0,78	0,87	0,84	1.179,84	872.270,15	##########	##########	########	237,49	145.105,85	3.287.269,88	6.283.258,45	628.325,85	6.911.584,30
76,266	17,544	8,584	6,678	0,70	4,347	2,044	2,627	0,801	NO	2,46	0,89	0,79	0,88	1,00	1.179,47	871.991,02	##########	##########	########	237,49	145.105,85	3.287.269,88	6.282.299,73	628.229,97	6.910.529,70
76,266	17,544	8,584	6,678	0,71	4,347	2,044	2,627	0,801	NO	2,46	0,89	0,80	0,88	1,15	1.179,09	871.711,89	##########	##########	########	237,49	145.105,85	3.287.269,88	6.281.341,00	628.134,10	6.909.475,10
76,266	18,044	8,346	6,493	0,68	4,227	2,162	2,779	0,801	NO	2,46	0,89	0,77	0,87	0,69	1.180,22	872.549,28	##########	##########	########	240,85	147.159,10	3.289.323,13	6.286.270,43	628.627,04	6.914.897,47
76,266	18,044	8,346	6,493	0,69	4,227	2,162	2,779	0,801	NO	2,46	0,89	0,78	0,87	0,84	1.179,84	872.270,15	##########	##########	########	240,85	147.159,10	3.289.323,13	6.285.311,70	628.531,17	6.913.842,87
76,266	18,044	8,346	6,493	0,70	4,227	2,162	2,779	0,801	NO	2,46	0,89	0,79	0,88	1,00	1.179,47	871.991,02	##########	##########	########	240,85	147.159,10	3.289.323,13	6.284.352,97	628.435,30	6.912.788,27
76,266	18,044	8,346	6,493	0,71	4,227	2,162	2,779	0,801	NO	2,46	0,89	0,80	0,88	1,15	1.179,09	871.711,89	##########	##########	########	240,85	147.159,10	3.289.323,13	6.283.394,25	628.339,42	6.911.733,67
76,266	18,544	8,121	6,318	0,68	4,113	2,283	2,935	0,801	NO	2,46	0,89	0,77	0,87	0,69	1.180,22	872.549,28	##########	##########	########	244,16	149.184,08	3.291.348,12	6.288.295,42	628.829,54	6.917.124,96 €
76,266	18,544	8,121	6,318	0,69	4,113	2,283	2,935	0,801	NO	2,46	0,89	0,78	0,87	0,84	1.179,84	872.270,15	##########	##########	########	244,16	149.184,08	3.291.348,12	6.287.336,69	628.733,67	6.916.070,36 €
76,266	18,544	8,121	6,318	0,70	4,113	2,283	2,935	0,801	NO	2,46	0,89	0,79	0,88	1,00	1.179,47	871.991,02	##########	##########	########	244,16	149.184,08	3.291.348,12	6.286.377,96	628.637,80	6.915.015,76 €
76,266	18,544	8,121	6,318	0,71	4,113	2,283	2,935	0,801	NO	2,46	0,89	0,80	0,88	1,15	1.179,09	871.711,89	##########	##########	########	244,16	149.184,08	3.291.348,12	6.285.419,24	628.541,92	6.913.961,16 €
76,27	19,044	7,908	6,152	0,68	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,77	0,87	0,69	1180,22	872.549 €	2.124.398 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.290.293 €	629.029 €	6.919.323 €
76,27	19,044	7,908	6,152	0,69	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,78	0,87	0,84	1179,84	872.270 €	2.123.718 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.289.335 €	628.933 €	6.918.268 €
76,27	19,044	7,908	6,152	0,70	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,79	0,88	1,00	1179,47	871.991 €	2.123.039 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.288.376 €	628.838 €	6.917.213 €
76,27	19,044	7,908	6,152	0,71	4,005	2,408	3,096	0,801	SI	2,46	0,89	0,80	0,88	1,15	1179,09	871.712 €	2.122.359 €	3.045.914 €	96.250 €	247,43	151.182 €	3.293.346 €	6.287.417 €	628.742 €	6.916.159 €
76,266	19,544	7,705	5,994	0,68	3,902	2,536	3,260	0,801	NO	2,46	0,89	0,77	0,87	0,69	1180,22	872549,28	2124398,02	3045914,03	96250,00	250,66	153153,76	3295317,79	6292265,09	629226,51	6921491,60
76,266	19,544	7,705	5,994	0,69	3,902	2,536	3,260	0,801	NO	2,46	0,89	0,78	0,87	0,84	1179,84	872270,15	2123718,42	3045914,03	96250,00	250,66	153153,76	3295317,79	6291306,37	629130,64	6920437,00
76,266	19,544	7,705	5,994	0,70	3,902	2,536	3,260	0,801	NO	2,46	0,89	0,79	0,88	1,00	1179,47	871991,02	2123038,83	3045914,03	96250,00	250,66	153153,76	3295317,79	6290347,64	629034,76	6919382,40
76,266	19,544	7,705	5,994	0,71	3,902	2,536	3,260	0,801	NO	2,46	0,89	0,80	0,88	1,15	1179,09	871711,89	2122359,23	3045914,03	96250,00	250,66	153153,76	3295317,79	6289388,91	628938,89	6918327,80
76,266	20,044	7,513	5,845	0,68	3,805	2,668	3,429	0,801	NO	2,46	0,89	0,77	0,87	0,69	1180,22	872549,28	2124398,02	3045914,03	96250,00	253,85	155100,50	3297264,54	6294211,83	629421,18	6923633,02
76,266	20,044	7,513	5,845	0,69	3,805	2,668	3,429	0,801	NO	2,46	0,89	0,78	0,87	0,84	1179,84	872270,15	2123718,42	3045914,03	96250,00	253,85	155100,50	3297264,54	6293253,11	629325,31	6922578,42
76,266	20,044	7,513	5,845	0,70	3,805	2,668	3,429	0,801	NO	2,46	0,89	0,79	0,88	1,00	1179,47	871991,02	2123038,83	3045914,03	96250,00	253,85	155100,50	3297264,54	6292294,38	629229,44	6921523,82
76,266	20,044	7,513	5,845	0,71	3,805	2,668	3,429	0,801	NO	2,46	0,89	0,80	0,88	1,15	1179,09	871711,89	2122359,23	3045914,03	96250,00	253,85	155100,50	3297264,54	6291335,65	629133,57	6920469,22
76,266	20,544	7,330	5,703	0,68	3,712	2,803	3,603	0,801	NO	2,46	0,89	0,77	0,87	0,69	1180,22	872549,28	2124398,02	3045914,03	96250,00	256,99	157023,11	3299187,15	6296134,44	629613,44	6925747,89
76,266	20,544	7,330	5,703	0,69	3,712	2,803	3,603	0,801	NO	2,46	0,89	0,78	0,87	0,84	1179,84	872270,15	2123718,42	3045914,03	96250,00	256,99	157023,11	3299187,15	6295175,72	629517,57	6924693,29
76,266	20,544	7,330	5,703	0,70	3,712	2,803	3,603	0,801	NO	2,46	0,89	0,79	0,88	1,00	1179,47	871991,02	2123038,83	3045914,03	96250,00	256,99	157023,11	3299187,15	6294216,99	629421,70	6923638,69
76,266	20,544	7,330	5,703	0,71	3,712	2,803	3,603	0,801	NO	2,46	0,89	0,80	0,88	1,15	1179,09	871711,89	2122359,23	3045914,03	96250,00	256,99	157023,11	3299187,15	6293258,26	629325,83	6922584,09
76,266	21,044	7,156	5,567	0,68	3,624	2,941	3,780	0,801	NO	2,46	0,89	0,77	0,87	0,69	1180,22	872549,28	2124398,02	3045914,03	96250,00	260,10	158922,46	3301086,50	6298033,80	629803,38	6927837,18
76,266	21,044	7,156	5,567	0,69	3,624	2,941	3,780	0,801	NO	2,46	0,89	0,78	0,87	0,84	1179,84	872270,15	2123718,42	3045914,03	96250,00	260,10	158922,46	3301086,50	6297075,07	629707,51	6926782,58
76,266	21,044	7,156	5,567	0,70	3,624	2,941	3,780	0,801	NO	2,46	0,89	0,79	0,88	1,00	1179,47	871991,02	2123038,83	3045914,03	96250,00	260,10	158922,46	3301086,50	6296116,34	629611,63	6925727,98
76,266	21,044	7,156	5,567	0,71	3,624	2,941	3,780	0,801	NO	2,46	0,89	0,80	0,88	1,15	1179,09	871711,89	2122359,23	3045914,03	96250,00	260,10	158922,46	3301086,50	6295157,62	629515,76	6924673,38

76,766	17,544	8,528	6,634	0,68	4,376	2,057	2,644	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	239,05	146057,16	3288221,20	6297553,39	629755,34	6927308,73
76,766	17,544	8,528	6,634	0,69	4,376	2,057	2,644	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	239,05	146057,16	3288221,20	6296590,70	629659,07	6926249,77
76,766	17,544	8,528	6,634	0,70	4,376	2,057	2,644	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	239,05	146057,16	3288221,20	6295628,01	629562,80	6925190,82
76,766	17,544	8,528	6,634	0,71	4,376	2,057	2,644	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	239,05	146057,16	3288221,20	6294665,33	629466,53	6924131,86
76,766	18,044	8,292	6,450	0,68	4,254	2,176	2,797	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	242,43	148123,87	3290287,90	6299620,10	629962,01	6929582,11
76,766	18,044	8,292	6,450	0,69	4,254	2,176	2,797	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	242,43	148123,87	3290287,90	6298657,41	629865,74	6928523,15
76,766	18,044	8,292	6,450	0,70	4,254	2,176	2,797	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	242,43	148123,87	3290287,90	6297694,72	629769,47	6927464,19
76,766	18,044	8,292	6,450	0,71	4,254	2,176	2,797	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	242,43	148123,87	3290287,90	6296732,03	629673,20	6926405,24
76,766	18,544	8,068	6,277	0,68	4,140	2,298	2,954	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	245,76	150162,14	3292326,17	6301658,36	630165,84	6931824,20
76,766	18,544	8,068	6,277	0,69	4,140	2,298	2,954	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	245,76	150162,14	3292326,17	6300695,67	630069,57	6930765,24
76,766	18,544	8,068	6,277	0,70	4,140	2,298	2,954	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	245,76	150162,14	3292326,17	6299732,99	629973,30	6929706,28
76,766	18,544	8,068	6,277	0,71	4,140	2,298	2,954	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	245,76	150162,14	3292326,17	6298770,30	629877,03	6928647,33
76,766	19,044	7,856	6,112	0,68	4,031	2,424	3,116	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	249,06	152173,10	3294337,13	6303669,33	630366,93	6934036,26
76,766	19,044	7,856	6,112	0,69	4,031	2,424	3,116	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	249,06	152173,10	3294337,13	6302706,64	630270,66	6932977,31
76,766	19,044	7,856	6,112	0,70	4,031	2,424	3,116	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	249,06	152173,10	3294337,13	6301743,95	630174,40	6931918,35
76,766	19,044	7,856	6,112	0,71	4,031	2,424	3,116	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	249,06	152173,10	3294337,13	6300781,26	630078,13	6930859,39
76,766	19,544	7,655	5,955	0,68	3,928	2,553	3,282	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	252,30	154157,84	3296321,87	6305654,07	630565,41	6936219,47
76,766	19,544	7,655	5,955	0,69	3,928	2,553	3,282	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	252,30	154157,84	3296321,87	6304691,38	630469,14	6935160,51
76,766	19,544	7,655	5,955	0,70	3,928	2,553	3,282	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	252,30	154157,84	3296321,87	6303728,69	630372,87	6934101,56
76,766	19,544	7,655	5,955	0,71	3,928	2,553	3,282	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	252,30	154157,84	3296321,87	6302766,00	630276,60	6933042,60
76,766	20,044	7,464	5,807	0,68	3,830	2,685	3,452	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	255,51	156117,34	3298281,38	6307613,57	630761,36	6938374,93
76,766	20,044	7,464	5,807	0,69	3,830	2,685	3,452	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	255,51	156117,34	3298281,38	6306650,88	630665,09	6937315,97
76,766	20,044	7,464	5,807	0,70	3,830	2,685	3,452	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	255,51	156117,34	3298281,38	6305688,19	630568,82	6936257,01
76,766	20,044	7,464	5,807	0,71	3,830	2,685	3,452	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	255,51	156117,34	3298281,38	6304725,50	630472,55	6935198,06
76,766	20,544	7,283	5,665	0,68	3,737	2,821	3,626	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	258,68	158052,56	3300216,59	6309548,78	630954,88	6940503,66
76,766	20,544	7,283	5,665	0,69	3,737	2,821	3,626	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	258,68	158052,56	3300216,59	6308586,10	630858,61	6939444,71
76,766	20,544	7,283	5,665	0,70	3,737	2,821	3,626	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	258,68	158052,56	3300216,59	6307623,41	630762,34	6938385,75
76,766	20,544	7,283	5,665	0,71	3,737	2,821	3,626	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	258,68	158052,56	3300216,59	6306660,72	630666,07	6937326,79
76,766	21,044	7,109	5,531	0,68	3,648	2,960	3,805	0,801	NO	2,45	0,89	0,77	0,87	0,69	1185,10	876155,09	2133177,10	3045914,03	96250,00	261,81	159964,36	3302128,39	6311460,59	631146,06	6942606,65
76,766	21,044	7,109	5,531	0,69	3,648	2,960	3,805	0,801	NO	2,45	0,89	0,78	0,87	0,85	1184,72	875874,81	2132494,70	3045914,03	96250,00	261,81	159964,36	3302128,39	6310497,90	631049,79	6941547,69
76,766	21,044	7,109	5,531	0,70	3,648	2,960	3,805	0,801	NO	2,45	0,89	0,79	0,88	1,00	1184,34	875594,53	2131812,29	3045914,03	96250,00	261,81	159964,36	3302128,39	6309535,21	630953,52	6940488,73
76,766	21,044	7,109	5,531	0,71	3,648	2,960	3,805	0,801	NO	2,45	0,89	0,80	0,88	1,16	1183,96	875314,24	2131129,89	3045914,03	96250,00	261,81	159964,36	3302128,39	6308572,52	630857,25	6939429,77
77,266	17,544	8,473	6,591	0,68	4,404	2,071	2,662	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	240,60	147008,48	3289172,51	6310859,88	631085,99	6941945,87
77,266	17,544	8,473	6,591	0,69	4,404	2,071	2,662	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	240,60	147008,48	3289172,51	6309893,24	630989,32	6940882,56
77,266	17,544	8,473	6,591	0,70	4,404	2,071	2,662	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	240,60	147008,48	3289172,51	6308926,60	630892,66	6939819,26
77,266	17,544	8,473	6,591	0,71	4,404	2,071	2,662	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	240,60	147008,48	3289172,51	6307959,96	630796,00	6938755,95
77,266	18,044	8,238	6,409	0,68	4,282	2,190	2,816	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	244,01	149088,65	3291252,68	6312940,05	631294,00	6944234,05
77,266	18,044	8,238	6,409	0,69	4,282	2,190	2,816	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	244,01	149088,65	3291252,68	6311973,41	631197,34	6943170,75
77,266	18,044	8,238	6,409	0,70	4,282	2,190	2,816	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	244,01	149088,65	3291252,68	6311006,77	631100,68	6942107,44
77,266	18,044	8,238	6,409	0,71	4,282	2,190	2,816	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	244,01	149088,65	3291252,68	6310040,12	631004,01	6941044,14
77,266	18,544	8,016	6,236	0,68	4,167	2,313	2,974	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	247,37	151140,19	3293304,22	6314991,59	631499,16	6946490,75
77,266	18,544	8,016	6,236	0,69	4,167	2,313	2,974	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	247,37	151140,19	3293304,22	6314024,95	631402,49	6945427,44
77,266	18,544	8,016	6,236	0,70	4,167	2,313	2,974	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	247,37	151140,19	3293304,22	6313058,31	631305,83	6944364,14
77,266	18,544	8,016	6,236	0,71	4,167	2,313	2,974	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	247,37	151140,19	3293304,22	6312091,67	631209,17	6943300,83
77,266	19,044	7,805	6,072	0,68	4,057	2,440	3,136	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	250,68	153164,25	3295328,28	6317015,65	631701,57	6948717,22
77,266	19,044	7,805	6,072	0,69	4,057	2,440	3,136	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	250,68	153164,25	3295328,28	6316049,01	631604,90	6947653,91
77,266	19,044	7,805	6,072	0,70	4,057	2,440	3,136	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	250,68	153164,25	3295328,28	6315082,37	631508,24	6946590,61

77,266	19,044	7,805	6,072	0,71	4,057	2,440	3,136	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	250,68	153164,25	3295328,28	6314115,73	631411,57	6945527,30
77,266	19,544	7,606	5,917	0,68	3,953	2,570	3,303	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	253,95	155161,91	3297325,95	6319013,32	631901,33	6950914,65
77,266	19,544	7,606	5,917	0,69	3,953	2,570	3,303	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	253,95	155161,91	3297325,95	6318046,67	631804,67	6949851,34
77,266	19,544	7,606	5,917	0,70	3,953	2,570	3,303	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	253,95	155161,91	3297325,95	6317080,03	631708,00	6948788,04
77,266	19,544	7,606	5,917	0,71	3,953	2,570	3,303	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	253,95	155161,91	3297325,95	6316113,39	631611,34	6947724,73
77,266	20,044	7,416	5,769	0,68	3,855	2,703	3,474	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	257,18	157134,18	3299298,21	6320985,58	632098,56	6953084,14
77,266	20,044	7,416	5,769	0,69	3,855	2,703	3,474	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	257,18	157134,18	3299298,21	6320018,94	632001,89	6952020,84
77,266	20,044	7,416	5,769	0,70	3,855	2,703	3,474	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	257,18	157134,18	3299298,21	6319052,30	631905,23	6950957,53
77,266	20,044	7,416	5,769	0,71	3,855	2,703	3,474	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	257,18	157134,18	3299298,21	6318085,66	631808,57	6949894,23
77,266	20,544	7,235	5,629	0,68	3,761	2,839	3,650	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	260,36	159082,00	3301246,03	6322933,40	632293,34	6955226,74
77,266	20,544	7,235	5,629	0,69	3,761	2,839	3,650	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	260,36	159082,00	3301246,03	6321966,76	632196,68	6954163,44
77,266	20,544	7,235	5,629	0,70	3,761	2,839	3,650	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	260,36	159082,00	3301246,03	6321000,12	632100,01	6953100,13
77,266	20,544	7,235	5,629	0,71	3,761	2,839	3,650	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	260,36	159082,00	3301246,03	6320033,48	632003,35	6952036,83
77,266	21,044	7,063	5,495	0,68	3,672	2,979	3,830	0,801	NO	2,44	0,89	0,77	0,87	0,70	1189,96	879752,25	2141935,12	3045914,03	96250,00	263,51	161006,26	3303170,29	6324857,66	632485,77	6957343,42
77,266	21,044	7,063	5,495	0,69	3,672	2,979	3,830	0,801	NO	2,44	0,89	0,78	0,87	0,85	1189,58	879470,82	2141249,91	3045914,03	96250,00	263,51	161006,26	3303170,29	6323891,02	632389,10	6956280,12
77,266	21,044	7,063	5,495	0,70	3,672	2,979	3,830	0,801	NO	2,44	0,89	0,79	0,88	1,01	1189,20	879189,38	2140564,70	3045914,03	96250,00	263,51	161006,26	3303170,29	6322924,38	632292,44	6955216,81
77,266	21,044	7,063	5,495	0,71	3,672	2,979	3,830	0,801	NO	2,44	0,89	0,80	0,88	1,17	1188,82	878907,95	2139879,50	3045914,03	96250,00	263,51	161006,26	3303170,29	6321957,74	632195,77	6954153,51
77,766	17,544	8,418	6,549	0,68	4,433	2,084	2,679	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	242,16	147959,79	3290123,82	6324136,91	632413,69	6956550,60
77,766	17,544	8,418	6,549	0,69	4,433	2,084	2,679	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	242,16	147959,79	3290123,82	6323166,33	632316,63	6955482,96
77,766	17,544	8,418	6,549	0,70	4,433	2,084	2,679	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	242,16	147959,79	3290123,82	6322195,74	632219,57	6954415,32
77,766	17,544	8,418	6,549	0,71	4,433	2,084	2,679	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	242,16	147959,79	3290123,82	6321225,16	632122,52	6953347,67
77,766	18,044	8,185	6,368	0,68	4,310	2,205	2,834	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	245,59	150053,42	3292217,45	6326230,54	632623,05	6958853,59
77,766	18,044	8,185	6,368	0,69	4,310	2,205	2,834	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	245,59	150053,42	3292217,45	6325259,95	632526,00	6957785,95
77,766	18,044	8,185	6,368	0,70	4,310	2,205	2,834	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	245,59	150053,42	3292217,45	6324289,37	632428,94	6956718,31
77,766	18,044	8,185	6,368	0,71	4,310	2,205	2,834	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	245,59	150053,42	3292217,45	6323318,79	632331,88	6955650,66
77,766	18,544	7,964	6,196	0,68	4,194	2,328	2,993	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	248,97	152118,24	3294282,27	6328295,36	632829,54	6961124,89
77,766	18,544	7,964	6,196	0,69	4,194	2,328	2,993	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	248,97	152118,24	3294282,27	6327324,77	632732,48	6960057,25
77,766	18,544	7,964	6,196	0,70	4,194	2,328	2,993	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	248,97	152118,24	3294282,27	6326354,19	632635,42	6958989,61
77,766	18,544	7,964	6,196	0,71	4,194	2,328	2,993	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	248,97	152118,24	3294282,27	6325383,60	632538,36	6957921,96
77,766	19,044	7,755	6,033	0,68	4,084	2,456	3,157	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	252,30	154155,40	3296319,43	6330332,52	633033,25	6963365,77
77,766	19,044	7,755	6,033	0,69	4,084	2,456	3,157	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	252,30	154155,40	3296319,43	6329361,93	632936,19	6962298,13
77,766	19,044	7,755	6,033	0,70	4,084	2,456	3,157	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	252,30	154155,40	3296319,43	6328391,35	632839,13	6961230,48
77,766	19,044	7,755	6,033	0,71	4,084	2,456	3,157	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	252,30	154155,40	3296319,43	6327420,76	632742,08	6960162,84
77,766	19,544	7,557	5,879	0,68	3,979	2,586	3,324	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	255,59	156165,99	3298330,02	6332343,11	633234,31	6965577,42
77,766	19,544	7,557	5,879	0,69	3,979	2,586	3,324	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	255,59	156165,99	3298330,02	6331372,52	633137,25	6964509,78
77,766	19,544	7,557	5,879	0,70	3,979	2,586	3,324	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	255,59	156165,99	3298330,02	6330401,94	633040,19	6963442,13
77,766	19,544	7,557	5,879	0,71	3,979	2,586	3,324	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	255,59	156165,99	3298330,02	6329431,35	632943,14	6962374,49
77,766	20,044	7,368	5,732	0,68	3,880	2,720	3,497	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	258,84	158151,02	3300315,05	6334328,14	633432,81	6967760,95
77,766	20,044	7,368	5,732	0,69	3,880	2,720	3,497	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	258,84	158151,02	3300315,05	6333357,55	633335,76	6966693,31
77,766	20,044	7,368	5,732	0,70	3,880	2,720	3,497	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	258,84	158151,02	3300315,05	6332386,97	633238,70	6965625,67
77,766	20,044	7,368	5,732	0,71	3,880	2,720	3,497	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	258,84	158151,02	3300315,05	6331416,39	633141,64	6964558,02
77,766	20,544	7,189	5,593	0,68	3,785	2,858	3,673	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	262,05	160111,44	3302275,48	6336288,56	633628,86	6969917,42
77,766	20,544	7,189	5,593	0,69	3,785	2,858	3,673	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	262,05	160111,44	3302275,48	6335317,98	633531,80	6968849,78
77,766	20,544	7,189	5,593	0,70	3,785	2,858	3,673	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	262,05	160111,44	3302275,48	6334347,39	633434,74	6967782,13
77,766	20,544	7,189	5,593	0,71	3,785	2,858	3,673	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	262,05	160111,44	3302275,48	6333376,81	633337,68	6966714,49
77,766	21,044	7,018	5,460	0,68	3,695	2,999	3,854	0,801	NO	2,44	0,89	0,77	0,87	0,70	1194,82	883340,83	2150672,25	3045914,03	96250,00	265,22	162048,15	3304212,18	6338225,27	633822,53	6972047,80
77,766	21,044	7,018	5,460	0,69	3,695	2,999	3,854	0,801	NO	2,44	0,89	0,78	0,87	0,86	1194,44	883058,25	2149984,25	3045914,03	96250,00	265,22	162048,15	3304212,18	6337254,69	633725,47	6970980,15

77,766	21,044	7,018	5,460	0,70	3,695	2,999	3,854	0,801	NO	2,44	0,89	0,79	0,88	1,02	1194,05	882775,67	2149296,25	3045914,03	96250,00	265,22	162048,15	3304212,18	6336284,10	633628,41	6969912,51
77,766	21,044	7,018	5,460	0,71	3,695	2,999	3,854	0,801	NO	2,44	0,89	0,80	0,88	1,17	1193,67	882493,09	2148608,24	3045914,03	96250,00	265,22	162048,15	3304212,18	6335313,52	633531,35	6968844,87
78,266	17,544	8,364	6,507	0,68	4,461	2,097	2,696	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	243,72	148911,11	3291075,14	6337384,74	633738,47	6971123,21
78,266	17,544	8,364	6,507	0,69	4,461	2,097	2,696	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	243,72	148911,11	3291075,14	6336410,22	633641,02	6970051,24
78,266	17,544	8,364	6,507	0,70	4,461	2,097	2,696	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	243,72	148911,11	3291075,14	6335435,70	633543,57	6968979,27
78,266	17,544	8,364	6,507	0,71	4,461	2,097	2,696	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	243,72	148911,11	3291075,14	6334461,18	633446,12	6967907,30
78,266	18,044	8,133	6,327	0,68	4,338	2,219	2,852	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	247,17	151018,20	3293182,23	6339491,83	633949,18	6973441,01
78,266	18,044	8,133	6,327	0,69	4,338	2,219	2,852	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	247,17	151018,20	3293182,23	6338517,31	633851,73	6972369,04
78,266	18,044	8,133	6,327	0,70	4,338	2,219	2,852	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	247,17	151018,20	3293182,23	6337542,79	633754,28	6971297,07
78,266	18,044	8,133	6,327	0,71	4,338	2,219	2,852	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	247,17	151018,20	3293182,23	6336568,27	633656,83	6970225,10
78,266	18,544	7,913	6,156	0,68	4,221	2,343	3,012	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	250,57	153096,29	3295260,32	6341569,92	634156,99	6975726,91
78,266	18,544	7,913	6,156	0,69	4,221	2,343	3,012	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	250,57	153096,29	3295260,32	6340595,40	634059,54	6974654,94
78,266	18,544	7,913	6,156	0,70	4,221	2,343	3,012	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	250,57	153096,29	3295260,32	6339620,89	633962,09	6973582,97
78,266	18,544	7,913	6,156	0,71	4,221	2,343	3,012	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	250,57	153096,29	3295260,32	6338646,37	633864,64	6972511,00
78,266	19,044	7,706	5,995	0,68	4,110	2,471	3,177	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	253,92	155146,55	3297310,58	6343620,18	634362,02	6977982,20
78,266	19,044	7,706	5,995	0,69	4,110	2,471	3,177	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	253,92	155146,55	3297310,58	6342645,66	634264,57	6976910,23
78,266	19,044	7,706	5,995	0,70	4,110	2,471	3,177	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	253,92	155146,55	3297310,58	6341671,15	634167,11	6975838,26
78,266	19,044	7,706	5,995	0,71	4,110	2,471	3,177	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	253,92	155146,55	3297310,58	6340696,63	634069,66	6974766,29
78,266	19,544	7,508	5,841	0,68	4,005	2,603	3,346	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	257,23	157170,07	3299334,10	6345643,70	634564,37	6980208,07
78,266	19,544	7,508	5,841	0,69	4,005	2,603	3,346	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	257,23	157170,07	3299334,10	6344669,18	634466,92	6979136,10
78,266	19,544	7,508	5,841	0,70	4,005	2,603	3,346	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	257,23	157170,07	3299334,10	6343694,66	634369,47	6978064,13
78,266	19,544	7,508	5,841	0,71	4,005	2,603	3,346	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	257,23	157170,07	3299334,10	6342720,14	634272,01	6976992,16
78,266	20,044	7,321	5,696	0,68	3,905	2,738	3,519	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	260,50	159167,86	3301331,89	6347641,49	634764,15	6982405,64
78,266	20,044	7,321	5,696	0,69	3,905	2,738	3,519	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	260,50	159167,86	3301331,89	6346666,97	634666,70	6981333,67
78,266	20,044	7,321	5,696	0,70	3,905	2,738	3,519	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	260,50	159167,86	3301331,89	6345692,46	634569,25	6980261,70
78,266	20,044	7,321	5,696	0,71	3,905	2,738	3,519	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	260,50	159167,86	3301331,89	6344717,94	634471,79	6979189,73
78,266	20,544	7,143	5,557	0,68	3,810	2,876	3,697	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	263,73	161140,89	3303304,92	6349614,52	634961,45	6984575,97
78,266	20,544	7,143	5,557	0,69	3,810	2,876	3,697	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	263,73	161140,89	3303304,92	6348640,00	634864,00	6983504,00
78,266	20,544	7,143	5,557	0,70	3,810	2,876	3,697	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	263,73	161140,89	3303304,92	6347665,48	634766,55	6982432,03
78,266	20,544	7,143	5,557	0,71	3,810	2,876	3,697	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	263,73	161140,89	3303304,92	6346690,97	634669,10	6981360,06
78,266	21,044	6,973	5,425	0,68	3,719	3,018	3,879	0,801	NO	2,43	0,89	0,77	0,87	0,71	1199,66	886920,92	2159388,68	3045914,03	96250,00	266,92	163090,05	3305254,08	6351563,68	635156,37	6986720,05
78,266	21,044	6,973	5,425	0,69	3,719	3,018	3,879	0,801	NO	2,43	0,89	0,78	0,87	0,86	1199,28	886637,19	2158697,89	3045914,03	96250,00	266,92	163090,05	3305254,08	6350589,16	635058,92	6985648,08
78,266	21,044	6,973	5,425	0,70	3,719	3,018	3,879	0,801	NO	2,43	0,89	0,79	0,88	1,02	1198,89	886353,46	2158007,10	3045914,03	96250,00	266,92	163090,05	3305254,08	6349614,64	634961,46	6984576,11
78,266	21,044	6,973	5,425	0,71	3,719	3,018	3,879	0,801	NO	2,43	0,89	0,80	0,88	1,18	1198,51	886069,73	2157316,31	3045914,03	96250,00	266,92	163090,05	3305254,08	6348640,13	634864,01	6983504,14
78,766	17,544	8,311	6,466	0,68	4,490	2,111	2,713	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	245,27	149862,42	3292026,45	6350603,62	635060,36	6985663,98
78,766	17,544	8,311	6,466	0,69	4,490	2,111	2,713	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	245,27	149862,42	3292026,45	6349625,18	634962,52	6984587,70
78,766	17,544	8,311	6,466	0,70	4,490	2,111	2,713	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	245,27	149862,42	3292026,45	6348646,74	634864,67	6983511,41
78,766	17,544	8,311	6,466	0,71	4,490	2,111	2,713	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	245,27	149862,42	3292026,45	6347668,30	634766,83	6982435,12
78,766	18,044	8,081	6,287	0,68	4,365	2,233	2,870	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	248,74	151982,97	3294147,00	6352724,17	635272,42	6987996,59
78,766	18,044	8,081	6,287	0,69	4,365	2,233	2,870	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	248,74	151982,97	3294147,00	6351745,73	635174,57	6986920,30
78,766	18,044	8,081	6,287	0,70	4,365	2,233	2,870	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	248,74	151982,97	3294147,00	6350767,29	635076,73	6985844,02
78,766	18,044	8,081	6,287	0,71	4,365	2,233	2,870	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	248,74	151982,97	3294147,00	6349788,85	634978,88	6984767,73
78,766	18,544	7,863	6,117	0,68	4,248	2,358	3,031	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	252,17	154074,34	3296238,37	6354815,54	635481,55	6990297,10
78,766	18,544	7,863	6,117	0,69	4,248	2,358	3,031	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	252,17	154074,34	3296238,37	6353837,10	635383,71	6989220,81
78,766	18,544	7,863	6,117	0,70	4,248	2,358	3,031	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	252,17	154074,34	3296238,37	6352858,66	635285,87	6988144,52
78,766	18,544	7,863	6,117	0,71	4,248	2,358	3,031	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	252,17	154074,34	3296238,37	6351880,21	635188,02	6987068,24
78,766	19,044	7,657	5,957	0,68	4,136	2,487	3,197	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	255,54	156137,70	3298301,73	6356878,90	635687,89	6992566,79

78,766	19,044	7,657	5,957	0,69	4,136	2,487	3,197	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	255,54	156137,70	3298301,73	6355900,46	635590,05	6991490,50
78,766	19,044	7,657	5,957	0,70	4,136	2,487	3,197	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	255,54	156137,70	3298301,73	6354922,02	635492,20	6990414,22
78,766	19,044	7,657	5,957	0,71	4,136	2,487	3,197	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	255,54	156137,70	3298301,73	6353943,57	635394,36	6989337,93
78,766	19,544	7,461	5,804	0,68	4,030	2,620	3,367	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	258,88	158174,14	3300338,18	6358915,34	635891,53	6994806,88
78,766	19,544	7,461	5,804	0,69	4,030	2,620	3,367	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	258,88	158174,14	3300338,18	6357936,90	635793,69	6993730,59
78,766	19,544	7,461	5,804	0,70	4,030	2,620	3,367	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	258,88	158174,14	3300338,18	6356958,46	635695,85	6992654,31
78,766	19,544	7,461	5,804	0,71	4,030	2,620	3,367	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	258,88	158174,14	3300338,18	6355980,02	635598,00	6991578,02
78,766	20,044	7,275	5,659	0,68	3,930	2,755	3,542	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	262,17	160184,70	3302348,73	6360925,90	636092,59	6997018,49
78,766	20,044	7,275	5,659	0,69	3,930	2,755	3,542	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	262,17	160184,70	3302348,73	6359947,46	635994,75	6995942,20
78,766	20,044	7,275	5,659	0,70	3,930	2,755	3,542	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	262,17	160184,70	3302348,73	6358969,02	635896,90	6994865,92
78,766	20,044	7,275	5,659	0,71	3,930	2,755	3,542	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	262,17	160184,70	3302348,73	6357990,57	635799,06	6993789,63
78,766	20,544	7,098	5,522	0,68	3,834	2,894	3,721	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	265,42	162170,33	3304334,36	6362911,53	636291,15	6999202,69
78,766	20,544	7,098	5,522	0,69	3,834	2,894	3,721	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	265,42	162170,33	3304334,36	6361933,09	636193,31	6998126,40
78,766	20,544	7,098	5,522	0,70	3,834	2,894	3,721	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	265,42	162170,33	3304334,36	6360954,65	636095,46	6997050,11
78,766	20,544	7,098	5,522	0,71	3,834	2,894	3,721	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	265,42	162170,33	3304334,36	6359976,21	635997,62	6995973,83
78,766	21,044	6,929	5,390	0,68	3,743	3,037	3,904	0,801	NO	2,42	0,89	0,77	0,87	0,71	1204,49	890492,57	2168084,60	3045914,03	96250,00	268,63	164131,94	3306295,98	6364873,15	636487,31	7001360,46
78,766	21,044	6,929	5,390	0,69	3,743	3,037	3,904	0,801	NO	2,42	0,89	0,78	0,87	0,87	1204,11	890207,70	2167391,03	3045914,03	96250,00	268,63	164131,94	3306295,98	6363894,70	636389,47	7000284,17
78,766	21,044	6,929	5,390	0,70	3,743	3,037	3,904	0,801	NO	2,42	0,89	0,79	0,88	1,03	1203,72	889922,83	2166697,45	3045914,03	96250,00	268,63	164131,94	3306295,98	6362916,26	636291,63	6999207,89
78,766	21,044	6,929	5,390	0,71	3,743	3,037	3,904	0,801	NO	2,42	0,89	0,80	0,88	1,19	1203,34	889637,96	2166003,88	3045914,03	96250,00	268,63	164131,94	3306295,98	6361937,82	636193,78	6998131,60
79,266	17,544	8,259	6,425	0,68	4,518	2,124	2,731	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	246,83	150813,73	3292977,77	6363793,81	636379,38	7000173,19
79,266	17,544	8,259	6,425	0,69	4,518	2,124	2,731	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	246,83	150813,73	3292977,77	6362811,45	636281,15	6999092,60
79,266	17,544	8,259	6,425	0,70	4,518	2,124	2,731	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	246,83	150813,73	3292977,77	6361829,10	636182,91	6998012,01
79,266	17,544	8,259	6,425	0,71	4,518	2,124	2,731	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	246,83	150813,73	3292977,77	6360846,74	636084,67	6996931,41
79,266	18,044	8,030	6,247	0,68	4,393	2,247	2,888	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	250,32	152947,75	3295111,78	6365927,82	636592,78	7002520,61
79,266	18,044	8,030	6,247	0,69	4,393	2,247	2,888	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	250,32	152947,75	3295111,78	6364945,47	636494,55	7001440,01
79,266	18,044	8,030	6,247	0,70	4,393	2,247	2,888	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	250,32	152947,75	3295111,78	6363963,11	636396,31	7000359,42
79,266	18,044	8,030	6,247	0,71	4,393	2,247	2,888	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	250,32	152947,75	3295111,78	6362980,75	636298,08	6999278,83
79,27	18,544	7,814	6,079	0,68	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,77	0,87	0,72	1209,31	894.056 €	2.176.760 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.368.032 €	636.803 €	7.004.836 €
79,27	18,544	7,814	6,079	0,69	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,78	0,87	0,88	1208,92	893.770 €	2.176.064 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.367.050 €	636.705 €	7.003.755 €
79,27	18,544	7,814	6,079	0,70	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,79	0,88	1,04	1208,54	893.484 €	2.175.367 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.366.068 €	636.607 €	7.002.675 €
79,27	18,544	7,814	6,079	0,71	4,275	2,373	3,051	0,801	SI	2,41	0,89	0,80	0,88	1,20	1208,15	893.198 €	2.174.671 €	3.045.914 €	96.250 €	253,77	155.052 €	3.297.216 €	6.365.085 €	636.509 €	7.001.594 €
79,266	19,044	7,608	5,919	0,68	4,162	2,503	3,217	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	257,17	157128,85	3299292,88	6370108,92	637010,89	7007119,82
79,266	19,044	7,608	5,919	0,69	4,162	2,503	3,217	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	257,17	157128,85	3299292,88	6369126,57	636912,66	7006039,22
79,266	19,044	7,608	5,919	0,70	4,162	2,503	3,217	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	257,17	157128,85	3299292,88	6368144,21	636814,42	7004958,63
79,266	19,044	7,608	5,919	0,71	4,162	2,503	3,217	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	257,17	157128,85	3299292,88	6367161,85	636716,19	7003878,04
79,266	19,544	7,414	5,768	0,68	4,056	2,636	3,389	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	260,52	159178,22	3301342,25	6372158,30	637215,83	7009374,12
79,266	19,544	7,414	5,768	0,69	4,056	2,636	3,389	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	260,52	159178,22	3301342,25	6371175,94	637117,59	7008293,53
79,266	19,544	7,414	5,768	0,70	4,056	2,636	3,389	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	260,52	159178,22	3301342,25	6370193,58	637019,36	7007212,94
79,266	19,544	7,414	5,768	0,71	4,056	2,636	3,389	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	260,52	159178,22	3301342,25	6369211,22	636921,12	7006132,35
79,266	20,044	7,229	5,624	0,68	3,955	2,773	3,564	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	263,83	161201,54	3303365,57	6374181,62	637418,16	7011599,78
79,266	20,044	7,229	5,624	0,69	3,955	2,773	3,564	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	263,83	161201,54	3303365,57	6373199,26	637319,93	7010519,18
79,266	20,044	7,229	5,624	0,70	3,955	2,773	3,564	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	263,83	161201,54	3303365,57	6372216,90	637221,69	7009438,59
79,266	20,044	7,229	5,624	0,71	3,955	2,773	3,564	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	263,83	161201,54	3303365,57	6371234,54	637123,45	7008358,00
79,266	20,544	7,053	5,487	0,68	3,858	2,913	3,744	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	267,10	163199,78	3305363,81	6376179,85	637617,99	7013797,84
79,266	20,544	7,053	5,487	0,69	3,858	2,913	3,744	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	267,10	163199,78	3305363,81	6375197,49	637519,75	7012717,24
79,266	20,544	7,053	5,487	0,70	3,858	2,913	3,744	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	267,10	163199,78	3305363,81	6374215,14	637421,51	7011636,65
79,266	20,544	7,053	5,487	0,71	3,858	2,913	3,744	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	267,10	163199,78	3305363,81	6373232,78	637323,28	7010556,06

79,266	21,044	6,885	5,356	0,68	3,767	3,056	3,929	0,801	NO	2,41	0,89	0,77	0,87	0,72	1209,31	894055,87	2176760,17	3045914,03	96250,00	270,33	165173,84	3307337,87	6378153,92	637815,39	7015969,31
79,266	21,044	6,885	5,356	0,69	3,767	3,056	3,929	0,801	NO	2,41	0,89	0,78	0,87	0,88	1208,92	893769,86	2176063,83	3045914,03	96250,00	270,33	165173,84	3307337,87	6377171,56	637717,16	7014888,71
79,266	21,044	6,885	5,356	0,70	3,767	3,056	3,929	0,801	NO	2,41	0,89	0,79	0,88	1,04	1208,54	893483,85	2175367,48	3045914,03	96250,00	270,33	165173,84	3307337,87	6376189,20	637618,92	7013808,12
79,266	21,044	6,885	5,356	0,71	3,767	3,056	3,929	0,801	NO	2,41	0,89	0,80	0,88	1,20	1208,15	893197,84	2174671,13	3045914,03	96250,00	270,33	165173,84	3307337,87	6375206,84	637520,68	7012727,53
79,766	17,544	8,207	6,385	0,68	4,547	2,138	2,748	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	248,39	151765,05	3293929,08	6376955,55	637695,56	7014651,11
79,766	17,544	8,207	6,385	0,69	4,547	2,138	2,748	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	248,39	151765,05	3293929,08	6375969,29	637596,93	7013566,22
79,766	17,544	8,207	6,385	0,70	4,547	2,138	2,748	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	248,39	151765,05	3293929,08	6374983,03	637498,30	7012481,33
79,766	17,544	8,207	6,385	0,71	4,547	2,138	2,748	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	248,39	151765,05	3293929,08	6373996,76	637399,68	7011396,44
79,766	18,044	7,980	6,208	0,68	4,421	2,261	2,907	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	251,90	153912,52	3296076,55	6379103,03	637910,30	7017013,33
79,766	18,044	7,980	6,208	0,69	4,421	2,261	2,907	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	251,90	153912,52	3296076,55	6378116,76	637811,68	7015928,44
79,766	18,044	7,980	6,208	0,70	4,421	2,261	2,907	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	251,90	153912,52	3296076,55	6377130,50	637713,05	7014843,55
79,766	18,044	7,980	6,208	0,71	4,421	2,261	2,907	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	251,90	153912,52	3296076,55	6376144,24	637614,42	7013758,66
79,77	18,544	7,765	6,040	0,68	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,77	0,87	0,72	1214,12	897.611 €	2.185.416 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.381.221 €	638.122 €	7.019.343 €
79,77	18,544	7,765	6,040	0,69	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,78	0,87	0,88	1213,73	897.324 €	2.184.716 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.380.235 €	638.023 €	7.018.258 €
79,77	18,544	7,765	6,040	0,70	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,79	0,88	1,04	1213,34	897.037 €	2.184.017 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.379.248 €	637.925 €	7.017.173 €
79,77	18,544	7,765	6,040	0,71	4,302	2,388	3,070	0,801	SI	2,40	0,89	0,80	0,88	1,20	1212,95	896.749 €	2.183.318 €	3.045.914 €	96.250 €	255,37	156.030 €	3.298.194 €	6.378.262 €	637.826 €	7.016.088 €
79,766	19,044	7,561	5,882	0,68	4,189	2,519	3,238	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	258,79	158120,00	3300284,03	6383310,50	638331,05	7021641,55
79,766	19,044	7,561	5,882	0,69	4,189	2,519	3,238	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	258,79	158120,00	3300284,03	6382324,24	638232,42	7020556,66
79,766	19,044	7,561	5,882	0,70	4,189	2,519	3,238	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	258,79	158120,00	3300284,03	6381337,97	638133,80	7019471,77
79,766	19,044	7,561	5,882	0,71	4,189	2,519	3,238	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	258,79	158120,00	3300284,03	6380351,71	638035,17	7018386,88
79,766	19,544	7,367	5,731	0,68	4,081	2,653	3,410	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	262,16	160182,29	3302346,33	6385372,80	638537,28	7023910,08
79,766	19,544	7,367	5,731	0,69	4,081	2,653	3,410	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	262,16	160182,29	3302346,33	6384386,54	638438,65	7022825,19
79,766	19,544	7,367	5,731	0,70	4,081	2,653	3,410	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	262,16	160182,29	3302346,33	6383400,27	638340,03	7021740,30
79,766	19,544	7,367	5,731	0,71	4,081	2,653	3,410	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	262,16	160182,29	3302346,33	6382414,01	638241,40	7020655,41
79,766	20,044	7,183	5,588	0,68	3,980	2,790	3,587	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	265,50	162218,38	3304382,41	6387408,88	638740,89	7026149,77
79,766	20,044	7,183	5,588	0,69	3,980	2,790	3,587	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	265,50	162218,38	3304382,41	6386422,62	638642,26	7025064,88
79,766	20,044	7,183	5,588	0,70	3,980	2,790	3,587	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	265,50	162218,38	3304382,41	6385436,36	638543,64	7023979,99
79,766	20,044	7,183	5,588	0,71	3,980	2,790	3,587	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	265,50	162218,38	3304382,41	6384450,09	638445,01	7022895,10
79,766	20,544	7,009	5,452	0,68	3,883	2,931	3,768	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	268,79	164229,22	3306393,25	6389419,72	638941,97	7028361,70
79,766	20,544	7,009	5,452	0,69	3,883	2,931	3,768	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	268,79	164229,22	3306393,25	6388433,46	638843,35	7027276,81
79,766	20,544	7,009	5,452	0,70	3,883	2,931	3,768	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	268,79	164229,22	3306393,25	6387447,20	638744,72	7026191,92
79,766	20,544	7,009	5,452	0,71	3,883	2,931	3,768	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	268,79	164229,22	3306393,25	6386460,93	638646,09	7025107,03
79,766	21,044	6,842	5,323	0,68	3,790	3,076	3,953	0,801	NO	2,40	0,89	0,77	0,87	0,72	1214,12	897610,89	2185415,59	3045914,03	96250,00	272,04	166215,74	3308379,77	6391406,24	639140,62	7030546,86
79,766	21,044	6,842	5,323	0,69	3,790	3,076	3,953	0,801	NO	2,40	0,89	0,78	0,87	0,88	1213,73	897323,74	2184716,47	3045914,03	96250,00	272,04	166215,74	3308379,77	6390419,98	639042,00	7029461,97
79,766	21,044	6,842	5,323	0,70	3,790	3,076	3,953	0,801	NO	2,40	0,89	0,79	0,88	1,04	1213,34	897036,59	2184017,35	3045914,03	96250,00	272,04	166215,74	3308379,77	6389433,71	638943,37	7028377,08
79,766	21,044	6,842	5,323	0,71	3,790	3,076	3,953	0,801	NO	2,40	0,89	0,80	0,88	1,20	1212,95	896749,45	2183318,23	3045914,03	96250,00	272,04	166215,74	3308379,77	6388447,45	638844,74	7027292,19
80,266	17,544	8,156	6,345	0,68	4,575	2,151	2,765	0,801	NO	2,40	0,89	0,77	0,87	0,73	1218,92	901157,69	2194051,00	3045914,03	96250,00	249,94	152716,36	3294880,40	6390089,09	639008,91	7029098,00
80,266	17,544	8,156	6,345	0,69	4,575	2,151	2,765	0,801	NO	2,40	0,89	0,78	0,87	0,89	1218,53	900869,41	2193349,13	3045914,03	96250,00	249,94	152716,36	3294880,40	6389098,93	638909,89	7028008,83
80,266	17,544	8,156	6,345	0,70	4,575	2,151	2,765	0,801	NO	2,40	0,89	0,79	0,88	1,05	1218,14	900581,13	2192647,25	3045914,03	96250,00	249,94	152716,36	3294880,40	6388108,77	638810,88	7026919,65
80,266	17,544	8,156	6,345	0,71	4,575	2,151	2,765	0,801	NO	2,40	0,89	0,80	0,88	1,21	1217,75	900292,85	2191945,37	3045914,03	96250,00	249,94	152716,36	3294880,40	6387118,61	638711,86	7025830,47
80,266	18,044	7,930	6,169	0,68	4,448	2,275	2,925	0,801	NO	2,40	0,89	0,77	0,87	0,73	1218,92	901157,69	2194051,00	3045914,03	96250,00	253,48	154877,30	3297041,33	6392250,03	639225,00	7031475,03
80,266	18,044	7,930	6,169	0,69	4,448	2,275	2,925	0,801	NO	2,40	0,89	0,78	0,87	0,89	1218,53	900869,41	2193349,13	3045914,03	96250,00	253,48	154877,30	3297041,33	6391259,87	639125,99	7030385,85
80,266	18,044	7,930	6,169	0,70	4,448	2,275	2,925	0,801	NO	2,40	0,89	0,79	0,88	1,05	1218,14	900581,13	2192647,25	3045914,03	96250,00	253,48	154877,30	3297041,33	6390269,71	639026,97	7029296,68
80,266	18,044	7,930	6,169	0,71	4,448	2,275	2,925	0,801	NO	2,40	0,89	0,80	0,88	1,21	1217,75	900292,85	2191945,37	3045914,03	96250,00	253,48	154877,30	3297041,33	6389279,55	638927,95	7028207,50
80,27	18,544	7,716	6,003	0,68	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,77	0,87	0,73	1218,92	901.158 €	2.194.051 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.394.381 €	639.438 €	7.033.819 €
80,27	18,544	7,716	6,003	0,69	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,78	0,87	0,89	1218,53	900.869 €	2.193.349 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.393.391 €	639.339 €	7.032.730 €
80,27	18,544	7,716	6,003	0,70	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,79	0,88	1,05	1218,14	900.581 €	2.192.647 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.392.401 €	639.240 €	7.031.641 €

80,27	18,544	7,716	6,003	0,71	4,328	2,403	3,089	0,801	SI	2,40	0,89	0,80	0,88	1,21	1217,75	900.293 €	2.191.945 €	3.045.914 €	96.250 €	256,97	157.008 €	3.299.173 €	6.391.411 €	639.141 €	7.030.552 €
80,266	19,044	7,514	5,845	0,68	4,215	2,535	3,258	0,801	NO	2,40	0,89	0,77	0,87	0,73	1.218,92	901.157,69	##########	##########	########	260,41	159.111,15	3.301.275,18	6.396.483,88	639.648,39	7.036.132,26
80,266	19,044	7,514	5,845	0,69	4,215	2,535	3,258	0,801	NO	2,40	0,89	0,78	0,87	0,89	1.218,53	900.869,41	##########	##########	########	260,41	159.111,15	3.301.275,18	6.395.493,72	639.549,37	7.035.043,09
80,266	19,044	7,514	5,845	0,70	4,215	2,535	3,258	0,801	NO	2,40	0,89	0,79	0,88	1,05	1.218,14	900.581,13	##########	##########	########	260,41	159.111,15	3.301.275,18	6.394.503,55	639.450,36	7.033.953,91
80,266	19,044	7,514	5,845	0,71	4,215	2,535	3,258	0,801	NO	2,40	0,89	0,80	0,88	1,21	1.217,75	900.292,85	##########	##########	########	260,41	159.111,15	3.301.275,18	6.393.513,39	639.351,34	7.032.864,73
80,266	19,544	7,321	5,696	0,68	4,107	2,669	3,431	0,801	NO	2,40	0,89	0,77	0,87	0,73	1.218,92	901.157,69	##########	##########	########	263,81	161.186,37	3.303.350,40	6.398.559,10	639.855,91	7.038.415,01
80,266	19,544	7,321	5,696	0,69	4,107	2,669	3,431	0,801	NO	2,40	0,89	0,78	0,87	0,89	1.218,53	900.869,41	##########	##########	########	263,81	161.186,37	3.303.350,40	6.397.568,94	639.756,89	7.037.325,84
80,266	19,544	7,321	5,696	0,70	4,107	2,669	3,431	0,801	NO	2,40	0,89	0,79	0,88	1,05	1.218,14	900.581,13	##########	##########	########	263,81	161.186,37	3.303.350,40	6.396.578,78	639.657,88	7.036.236,66
80,266	19,544	7,321	5,696	0,71	4,107	2,669	3,431	0,801	NO	2,40	0,89	0,80	0,88	1,21	1.217,75	900.292,85	##########	##########	########	263,81	161.186,37	3.303.350,40	6.395.588,62	639.558,86	7.035.147,48
80,266	20,044	7,139	5,554	0,68	4,005	2,808	3,609	0,801	NO	2,40	0,89	0,77	0,87	0,73	1.218,92	901.157,69	##########	##########	########	267,16	163.235,22	3.305.399,25	6.400.607,95	640.060,79	7.040.668,74
80,266	20,044	7,139	5,554	0,69	4,005	2,808	3,609	0,801	NO	2,40	0,89	0,78	0,87	0,89	1.218,53	900.869,41	##########	##########	########	267,16	163.235,22	3.305.399,25	6.399.617,79	639.961,78	7.039.579,57
80,266	20,044	7,139	5,554	0,70	4,005	2,808	3,609	0,801	NO	2,40	0,89	0,79	0,88	1,05	1.218,14	900.581,13	##########	##########	########	267,16	163.235,22	3.305.399,25	6.398.627,63	639.862,76	7.038.490,39
80,266	20,044	7,139	5,554	0,71	4,005	2,808	3,609	0,801	NO	2,40	0,89	0,80	0,88	1,21	1.217,75	900.292,85	##########	##########	########	267,16	163.235,22	3.305.399,25	6.397.637,47	639.763,75	7.037.401,21
80,266	20,544	6,965	5,418	0,68	3,907	2,950	3,791	0,801	NO	2,40	0,89	0,77	0,87	0,73	1.218,92	901.157,69	##########	##########	########	270,47	165.258,66	3.307.422,70	6.402.631,39	640.263,14	7.042.894,53
80,266	20,544	6,965	5,418	0,69	3,907	2,950	3,791	0,801	NO	2,40	0,89	0,78	0,87	0,89	1.218,53	900.869,41	##########	##########	########	270,47	165.258,66	3.307.422,70	6.401.641,23	640.164,12	7.041.805,36
80,266	20,544	6,965	5,418	0,70	3,907	2,950	3,791	0,801	NO	2,40	0,89	0,79	0,88	1,05	1.218,14	900.581,13	##########	##########	########	270,47	165.258,66	3.307.422,70	6.400.651,07	640.065,11	7.040.716,18
80,266	20,544	6,965	5,418	0,71	3,907	2,950	3,791	0,801	NO	2,40	0,89	0,80	0,88	1,21	1.217,75	900.292,85	##########	##########	########	270,47	165.258,66	3.307.422,70	6.399.660,91	639.966,09	7.039.627,00
80,266	21,044	6,799	5,290	0,68	3,814	3,095	3,978	0,801	NO	2,40	0,89	0,77	0,87	0,73	1.218,92	901.157,69	##########	##########	########	273,74	167.257,63	3.309.421,66	6.404.630,36	640.463,04	7.045.093,40
80,266	21,044	6,799	5,290	0,69	3,814	3,095	3,978	0,801	NO	2,40	0,89	0,78	0,87	0,89	1.218,53	900.869,41	##########	##########	########	273,74	167.257,63	3.309.421,66	6.403.640,20	640.364,02	7.044.004,22
80,266	21,044	6,799	5,290	0,70	3,814	3,095	3,978	0,801	NO	2,40	0,89	0,79	0,88	1,05	1.218,14	900.581,13	##########	##########	########	273,74	167.257,63	3.309.421,66	6.402.650,04	640.265,00	7.042.915,04
80,266	21,044	6,799	5,290	0,71	3,814	3,095	3,978	0,801	NO	2,40	0,89	0,80	0,88	1,21	1.217,75	900.292,85	##########	##########	########	273,74	167.257,63	3.309.421,66	6.401.659,88	640.165,99	7.041.825,87
80,766	17,544	8,105	6,306	0,68	4,604	2,164	2,782	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	251,50	153.667,68	3.295.831,71	6.403.194,67	640.319,47	7.043.514,14
80,766	17,544	8,105	6,306	0,69	4,604	2,164	2,782	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	251,50	153.667,68	3.295.831,71	6.402.200,62	640.220,06	7.042.420,68
80,766	17,544	8,105	6,306	0,70	4,604	2,164	2,782	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	251,50	153.667,68	3.295.831,71	6.401.206,57	640.120,66	7.041.327,23
80,766	17,544	8,105	6,306	0,71	4,604	2,164	2,782	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	251,50	153.667,68	3.295.831,71	6.400.212,52	640.021,25	7.040.233,78
80,766	18,044	7,881	6,131	0,68	4,476	2,290	2,943	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	255,06	155.842,07	3.298.006,11	6.405.369,07	640.536,91	7.045.905,97 €
80,766	18,044	7,881	6,131	0,69	4,476	2,290	2,943	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	255,06	155.842,07	3.298.006,11	6.404.375,02	640.437,50	7.044.812,52 €
80,766	18,044	7,881	6,131	0,70	4,476	2,290	2,943	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	255,06	155.842,07	3.298.006,11	6.403.380,97	640.338,10	7.043.719,07 €
80,766	18,044	7,881	6,131	0,71	4,476	2,290	2,943	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	255,06	155.842,07	3.298.006,11	6.402.386,92	640.238,69	7.042.625,61 €
80,766	18,544	7,668	5,966	0,68	4,355	2,418	3,108	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	258,57	157.986,54	3.300.150,58	6.407.513,54	640.751,35	7.048.264,89
80,766	18,544	7,668	5,966	0,69	4,355	2,418	3,108	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	258,57	157.986,54	3.300.150,58	6.406.519,49	640.651,95	7.047.171,44
80,766	18,544	7,668	5,966	0,70	4,355	2,418	3,108	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	258,57	157.986,54	3.300.150,58	6.405.525,44	640.552,54	7.046.077,98
80,766	18,544	7,668	5,966	0,71	4,355	2,418	3,108	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	258,57	157.986,54	3.300.150,58	6.404.531,39	640.453,14	7.044.984,53
80,766	19,044	7,467	5,809	0,68	4,241	2,550	3,278	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	262,03	160.102,29	3.302.266,33	6.409.629,29	640.962,93	7.050.592,22
80,766	19,044	7,467	5,809	0,69	4,241	2,550	3,278	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	262,03	160.102,29	3.302.266,33	6.408.635,24	640.863,52	7.049.498,76
80,766	19,044	7,467	5,809	0,70	4,241	2,550	3,278	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	262,03	160.102,29	3.302.266,33	6.407.641,19	640.764,12	7.048.405,31
80,766	19,044	7,467	5,809	0,71	4,241	2,550	3,278	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	262,03	160.102,29	3.302.266,33	6.406.647,14	640.664,71	7.047.311,86
80,766	19,544	7,276	5,660	0,68	4,133	2,686	3,453	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	265,45	162.190,45	3.304.354,48	6.411.717,44	641.171,74	7.052.889,19
80,766	19,544	7,276	5,660	0,69	4,133	2,686	3,453	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	265,45	162.190,45	3.304.354,48	6.410.723,39	641.072,34	7.051.795,73
80,766	19,544	7,276	5,660	0,70	4,133	2,686	3,453	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	265,45	162.190,45	3.304.354,48	6.409.729,34	640.972,93	7.050.702,28
80,766	19,544	7,276	5,660	0,71	4,133	2,686	3,453	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	265,45	162.190,45	3.304.354,48	6.408.735,29	640.873,53	7.049.608,82
80,766	20,044	7,095	5,519	0,68	4,029	2,825	3,632	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	268,82	164.252,06	3.306.416,09	6.413.779,05	641.377,90	7.055.156,95
80,766	20,044	7,095	5,519	0,69	4,029	2,825	3,632	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	268,82	164.252,06	3.306.416,09	6.412.785,00	641.278,50	7.054.063,50
80,766	20,044	7,095	5,519	0,70	4,029	2,825	3,632	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	268,82	164.252,06	3.306.416,09	6.411.790,95	641.179,10	7.052.970,05
80,766	20,044	7,095	5,519	0,71	4,029	2,825	3,632	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	268,82	164.252,06	3.306.416,09	6.410.796,90	641.079,69	7.051.876,59
80,766	20,544	6,922	5,385	0,68	3,931	2,968	3,815	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	272,16	166.288,11	3.308.452,14	6.415.815,10	641.581,51	7.057.396,61
80,766	20,544	6,922	5,385	0,69	3,931	2,968	3,815	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	272,16	166.288,11	3.308.452,14	6.414.821,05	641.482,11	7.056.303,16

80,766	20,544	6,922	5,385	0,70	3,931	2,968	3,815	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	272,16	166.288,11	3.308.452,14	6.413.827,00	641.382,70	7.055.209,70
80,766	20,544	6,922	5,385	0,71	3,931	2,968	3,815	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	272,16	166.288,11	3.308.452,14	6.412.832,95	641.283,30	7.054.116,25
80,766	21,044	6,757	5,257	0,68	3,838	3,114	4,003	0,801	NO	2,39	0,89	0,77	0,87	0,73	1.223,70	904.696,36	##########	##########	########	275,45	168.299,53	3.310.463,56	6.417.826,52	641.782,65	7.059.609,17
80,766	21,044	6,757	5,257	0,69	3,838	3,114	4,003	0,801	NO	2,39	0,89	0,78	0,87	0,89	1.223,31	904.406,95	##########	##########	########	275,45	168.299,53	3.310.463,56	6.416.832,47	641.683,25	7.058.515,72
80,766	21,044	6,757	5,257	0,70	3,838	3,114	4,003	0,801	NO	2,39	0,89	0,79	0,88	1,05	1.222,92	904.117,53	##########	##########	########	275,45	168.299,53	3.310.463,56	6.415.838,42	641.583,84	7.057.422,27
80,766	21,044	6,757	5,257	0,71	3,838	3,114	4,003	0,801	NO	2,39	0,89	0,80	0,88	1,22	1.222,53	903.828,12	##########	##########	########	275,45	168.299,53	3.310.463,56	6.414.844,37	641.484,44	7.056.328,81
81,266	17,544	8,056	6,267	0,68	4,632	2,178	2,799	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	253,06	154.618,99	3.296.783,02	6.416.272,52	641.627,25	7.057.899,77
81,266	17,544	8,056	6,267	0,69	4,632	2,178	2,799	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	253,06	154.618,99	3.296.783,02	6.415.274,59	641.527,46	7.056.802,05
81,266	17,544	8,056	6,267	0,70	4,632	2,178	2,799	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	253,06	154.618,99	3.296.783,02	6.414.276,67	641.427,67	7.055.704,33
81,266	17,544	8,056	6,267	0,71	4,632	2,178	2,799	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	253,06	154.618,99	3.296.783,02	6.413.278,74	641.327,87	7.054.606,61
81,266	18,044	7,832	6,093	0,68	4,504	2,304	2,961	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	256,64	156.806,85	3.298.970,88	6.418.460,38	641.846,04	7.060.306,42 €
81,266	18,044	7,832	6,093	0,69	4,504	2,304	2,961	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	256,64	156.806,85	3.298.970,88	6.417.462,45	641.746,25	7.059.208,70 €
81,266	18,044	7,832	6,093	0,70	4,504	2,304	2,961	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	256,64	156.806,85	3.298.970,88	6.416.464,52	641.646,45	7.058.110,97 €
81,266	18,044	7,832	6,093	0,71	4,504	2,304	2,961	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	256,64	156.806,85	3.298.970,88	6.415.466,59	641.546,66	7.057.013,25 €
81,266	18,544	7,621	5,929	0,68	4,382	2,433	3,128	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	260,17	158.964,60	3.301.128,63	6.420.618,13	642.061,81	7.062.679,94
81,266	18,544	7,621	5,929	0,69	4,382	2,433	3,128	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	260,17	158.964,60	3.301.128,63	6.419.620,20	641.962,02	7.061.582,22
81,266	18,544	7,621	5,929	0,70	4,382	2,433	3,128	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	260,17	158.964,60	3.301.128,63	6.418.622,27	641.862,23	7.060.484,50
81,266	18,544	7,621	5,929	0,71	4,382	2,433	3,128	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	260,17	158.964,60	3.301.128,63	6.417.624,34	641.762,43	7.059.386,78
81,266	19,044	7,421	5,773	0,68	4,267	2,566	3,299	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	263,66	161.093,44	3.303.257,48	6.422.746,97	642.274,70	7.065.021,67
81,266	19,044	7,421	5,773	0,69	4,267	2,566	3,299	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	263,66	161.093,44	3.303.257,48	6.421.749,05	642.174,90	7.063.923,95
81,266	19,044	7,421	5,773	0,70	4,267	2,566	3,299	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	263,66	161.093,44	3.303.257,48	6.420.751,12	642.075,11	7.062.826,23
81,266	19,044	7,421	5,773	0,71	4,267	2,566	3,299	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	263,66	161.093,44	3.303.257,48	6.419.753,19	641.975,32	7.061.728,51
81,266	19,544	7,231	5,626	0,68	4,158	2,703	3,474	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	267,09	163.194,52	3.305.358,56	6.424.848,05	642.484,81	7.067.332,86
81,266	19,544	7,231	5,626	0,69	4,158	2,703	3,474	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	267,09	163.194,52	3.305.358,56	6.423.850,13	642.385,01	7.066.235,14
81,266	19,544	7,231	5,626	0,70	4,158	2,703	3,474	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	267,09	163.194,52	3.305.358,56	6.422.852,20	642.285,22	7.065.137,42
81,266	19,544	7,231	5,626	0,71	4,158	2,703	3,474	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	267,09	163.194,52	3.305.358,56	6.421.854,27	642.185,43	7.064.039,70
81,266	20,044	7,051	5,485	0,68	4,054	2,843	3,654	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	270,49	165.268,89	3.307.432,93	6.426.922,43	642.692,24	7.069.614,67
81,266	20,044	7,051	5,485	0,69	4,054	2,843	3,654	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	270,49	165.268,89	3.307.432,93	6.425.924,50	642.592,45	7.068.516,95
81,266	20,044	7,051	5,485	0,70	4,054	2,843	3,654	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	270,49	165.268,89	3.307.432,93	6.424.926,57	642.492,66	7.067.419,23
81,266	20,044	7,051	5,485	0,71	4,054	2,843	3,654	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	270,49	165.268,89	3.307.432,93	6.423.928,64	642.392,86	7.066.321,51
81,266	20,544	6,879	5,352	0,68	3,956	2,986	3,839	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	273,84	167.317,55	3.309.481,58	6.428.971,08	642.897,11	7.071.868,19
81,266	20,544	6,879	5,352	0,69	3,956	2,986	3,839	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	273,84	167.317,55	3.309.481,58	6.427.973,15	642.797,32	7.070.770,47
81,266	20,544	6,879	5,352	0,70	3,956	2,986	3,839	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	273,84	167.317,55	3.309.481,58	6.426.975,22	642.697,52	7.069.672,75
81,266	20,544	6,879	5,352	0,71	3,956	2,986	3,839	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	273,84	167.317,55	3.309.481,58	6.425.977,30	642.597,73	7.068.575,03
81,266	21,044	6,716	5,225	0,68	3,862	3,133	4,028	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.228,48	908.226,95	##########	##########	########	277,15	169.341,42	3.311.505,46	6.430.994,95	643.099,50	7.074.094,45
81,266	21,044	6,716	5,225	0,69	3,862	3,133	4,028	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.228,09	907.936,41	##########	##########	########	277,15	169.341,42	3.311.505,46	6.429.997,03	642.999,70	7.072.996,73
81,266	21,044	6,716	5,225	0,70	3,862	3,133	4,028	0,801	NO	2,38	0,89	0,79	0,88	1,06	1.227,69	907.645,87	##########	##########	########	277,15	169.341,42	3.311.505,46	6.428.999,10	642.899,91	7.071.899,01
81,266	21,044	6,716	5,225	0,71	3,862	3,133	4,028	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.227,30	907.355,32	##########	##########	########	277,15	169.341,42	3.311.505,46	6.428.001,17	642.800,12	7.070.801,29
81,766	17,544	8,006	6,229	0,68	4,661	2,191	2,817	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	254,62	155.570,31	3.297.734,34	6.429.322,88	642.932,29	7.072.255,17
81,766	17,544	8,006	6,229	0,69	4,661	2,191	2,817	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	254,62	155.570,31	3.297.734,34	6.428.321,08	642.832,11	7.071.153,19
81,766	17,544	8,006	6,229	0,70	4,661	2,191	2,817	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	254,62	155.570,31	3.297.734,34	6.427.319,28	642.731,93	7.070.051,21
81,766	17,544	8,006	6,229	0,71	4,661	2,191	2,817	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	254,62	155.570,31	3.297.734,34	6.426.317,48	642.631,75	7.068.949,23
81,766	18,044	7,785	6,056	0,68	4,532	2,318	2,979	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	258,22	157.771,62	3.299.935,66	6.431.524,20	643.152,42	7.074.676,62 €
81,766	18,044	7,785	6,056	0,69	4,532	2,318	2,979	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	258,22	157.771,62	3.299.935,66	6.430.522,40	643.052,24	7.073.574,64 €
81,766	18,044	7,785	6,056	0,70	4,532	2,318	2,979	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	258,22	157.771,62	3.299.935,66	6.429.520,60	642.952,06	7.072.472,66 €
81,766	18,044	7,785	6,056	0,71	4,532	2,318	2,979	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	258,22	157.771,62	3.299.935,66	6.428.518,80	642.851,88	7.071.370,68 €
81,766	18,544	7,575	5,893	0,68	4,409	2,448	3,147	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	261,77	159.942,65	3.302.106,68	6.433.695,22	643.369,52	7.077.064,74

81,766	18,544	7,575	5,893	0,69	4,409	2,448	3,147	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	261,77	159.942,65	3.302.106,68	6.432.693,42	643.269,34	7.075.962,76
81,766	18,544	7,575	5,893	0,70	4,409	2,448	3,147	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	261,77	159.942,65	3.302.106,68	6.431.691,62	643.169,16	7.074.860,79
81,766	18,544	7,575	5,893	0,71	4,409	2,448	3,147	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	261,77	159.942,65	3.302.106,68	6.430.689,83	643.068,98	7.073.758,81
81,766	19,044	7,376	5,738	0,68	4,294	2,582	3,319	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	265,28	162.084,59	3.304.248,63	6.435.837,17	643.583,72	7.079.420,88
81,766	19,044	7,376	5,738	0,69	4,294	2,582	3,319	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	265,28	162.084,59	3.304.248,63	6.434.835,37	643.483,54	7.078.318,91
81,766	19,044	7,376	5,738	0,70	4,294	2,582	3,319	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	265,28	162.084,59	3.304.248,63	6.433.833,57	643.383,36	7.077.216,93
81,766	19,044	7,376	5,738	0,71	4,294	2,582	3,319	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	265,28	162.084,59	3.304.248,63	6.432.831,77	643.283,18	7.076.114,95
81,766	19,544	7,187	5,591	0,68	4,184	2,719	3,495	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	268,74	164.198,60	3.306.362,63	6.437.951,17	643.795,12	7.081.746,29
81,766	19,544	7,187	5,591	0,69	4,184	2,719	3,495	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	268,74	164.198,60	3.306.362,63	6.436.949,38	643.694,94	7.080.644,31
81,766	19,544	7,187	5,591	0,70	4,184	2,719	3,495	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	268,74	164.198,60	3.306.362,63	6.435.947,58	643.594,76	7.079.542,34
81,766	19,544	7,187	5,591	0,71	4,184	2,719	3,495	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	268,74	164.198,60	3.306.362,63	6.434.945,78	643.494,58	7.078.440,36
81,766	20,044	7,008	5,452	0,68	4,079	2,860	3,677	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	272,15	166.285,73	3.308.449,77	6.440.038,31	644.003,83	7.084.042,14
81,766	20,044	7,008	5,452	0,69	4,079	2,860	3,677	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	272,15	166.285,73	3.308.449,77	6.439.036,51	643.903,65	7.082.940,16
81,766	20,044	7,008	5,452	0,70	4,079	2,860	3,677	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	272,15	166.285,73	3.308.449,77	6.438.034,71	643.803,47	7.081.838,18
81,766	20,044	7,008	5,452	0,71	4,079	2,860	3,677	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	272,15	166.285,73	3.308.449,77	6.437.032,91	643.703,29	7.080.736,20
81,766	20,544	6,837	5,319	0,68	3,980	3,005	3,862	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	275,53	168.346,99	3.310.511,03	6.442.099,57	644.209,96	7.086.309,53
81,766	20,544	6,837	5,319	0,69	3,980	3,005	3,862	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	275,53	168.346,99	3.310.511,03	6.441.097,77	644.109,78	7.085.207,55
81,766	20,544	6,837	5,319	0,70	3,980	3,005	3,862	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	275,53	168.346,99	3.310.511,03	6.440.095,97	644.009,60	7.084.105,57
81,766	20,544	6,837	5,319	0,71	3,980	3,005	3,862	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	275,53	168.346,99	3.310.511,03	6.439.094,17	643.909,42	7.083.003,59
81,766	21,044	6,675	5,193	0,68	3,886	3,153	4,053	0,801	NO	2,38	0,89	0,77	0,87	0,74	1.233,24	911.749,54	##########	##########	########	278,86	170.383,32	3.312.547,35	6.444.135,89	644.413,59	7.088.549,48
81,766	21,044	6,675	5,193	0,69	3,886	3,153	4,053	0,801	NO	2,38	0,89	0,78	0,87	0,90	1.232,85	911.457,87	##########	##########	########	278,86	170.383,32	3.312.547,35	6.443.134,10	644.313,41	7.087.447,51
81,766	21,044	6,675	5,193	0,70	3,886	3,153	4,053	0,801	NO	2,38	0,89	0,79	0,88	1,07	1.232,45	911.166,20	##########	##########	########	278,86	170.383,32	3.312.547,35	6.442.132,30	644.213,23	7.086.345,53
81,766	21,044	6,675	5,193	0,71	3,886	3,153	4,053	0,801	NO	2,38	0,89	0,80	0,88	1,23	1.232,06	910.874,53	##########	##########	########	278,86	170.383,32	3.312.547,35	6.441.130,50	644.113,05	7.085.243,55
82,266	17,544	7,958	6,191	0,68	4,689	2,205	2,834	0,801	NO	2,37	0,89	0,77	0,87	0,74	1.238,00	915.264,19	##########	##########	########	256,17	156.521,62	3.298.685,65	6.442.345,98	644.234,60	7.086.580,57
82,266	17,544	7,958	6,191	0,69	4,689	2,205	2,834	0,801	NO	2,37	0,89	0,78	0,87	0,91	1.237,60	914.971,40	##########	##########	########	256,17	156.521,62	3.298.685,65	6.441.340,32	644.134,03	7.085.474,35
82,266	17,544	7,958	6,191	0,70	4,689	2,205	2,834	0,801	NO	2,37	0,89	0,79	0,88	1,07	1.237,21	914.678,60	##########	##########	########	256,17	156.521,62	3.298.685,65	6.440.334,66	644.033,47	7.084.368,12
82,266	17,544	7,958	6,191	0,71	4,689	2,205	2,834	0,801	NO	2,37	0,89	0,80	0,88	1,24	1.236,81	914.385,81	##########	##########	########	256,17	156.521,62	3.298.685,65	6.439.328,99	643.932,90	7.083.261,89
82,266	18,044	7,737	6,019	0,68	4,559	2,332	2,998	0,801	NO	2,37	0,89	0,77	0,87	0,74	1.238,00	915.264,19	##########	##########	########	259,80	158.736,40	3.300.900,43	6.444.560,75	644.456,08	7.089.016,83 €
82,266	18,044	7,737	6,019	0,69	4,559	2,332	2,998	0,801	NO	2,37	0,89	0,78	0,87	0,91	1.237,60	914.971,40	##########	##########	########	259,80	158.736,40	3.300.900,43	6.443.555,09	644.355,51	7.087.910,60 €
82,266	18,044	7,737	6,019	0,70	4,559	2,332	2,998	0,801	NO	2,37	0,89	0,79	0,88	1,07	1.237,21	914.678,60	##########	##########	########	259,80	158.736,40	3.300.900,43	6.442.549,43	644.254,94	7.086.804,38 €
82,266	18,044	7,737	6,019	0,71	4,559	2,332	2,998	0,801	NO	2,37	0,89	0,80	0,88	1,24	1.236,81	914.385,81	##########	##########	########	259,80	158.736,40	3.300.900,43	6.441.543,77	644.154,38	7.085.698,15 €
82,266	18,544	7,529	5,857		4,436	2,463	3,166	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	263,37	160.920,70	3.303.084,73	#¡REF!	#¡REF!	#¡REF!
82,266	18,544	7,529	5,857		4,436	2,463	3,166	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	263,37	160.920,70	3.303.084,73	#¡REF!	#¡REF!	#¡REF!
82,266	18,544	7,529	5,857		4,436	2,463	3,166	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	263,37	160.920,70	3.303.084,73	#¡REF!	#¡REF!	#¡REF!
82,266	18,544	7,529	5,857		4,436	2,463	3,166	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	263,37	160.920,70	3.303.084,73	#¡REF!	#¡REF!	#¡REF!
82,266	19,044	7,331	5,703		4,320	2,598	3,339	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	266,90	163.075,74	3.305.239,77	#¡REF!	#¡REF!	#¡REF!
82,266	19,044	7,331	5,703		4,320	2,598	3,339	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	266,90	163.075,74	3.305.239,77	#¡REF!	#¡REF!	#¡REF!
82,266	19,044	7,331	5,703		4,320	2,598	3,339	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	266,90	163.075,74	3.305.239,77	#¡REF!	#¡REF!	#¡REF!
82,266	19,044	7,331	5,703		4,320	2,598	3,339	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	266,90	163.075,74	3.305.239,77	#¡REF!	#¡REF!	#¡REF!
82,266	19,544	7,143	5,557		4,209	2,736	3,517	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	270,38	165.202,68	3.307.366,71	#¡REF!	#¡REF!	#¡REF!
82,266	19,544	7,143	5,557		4,209	2,736	3,517	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	270,38	165.202,68	3.307.366,71	#¡REF!	#¡REF!	#¡REF!
82,266	19,544	7,143	5,557		4,209	2,736	3,517	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	270,38	165.202,68	3.307.366,71	#¡REF!	#¡REF!	#¡REF!
82,266	19,544	7,143	5,557		4,209	2,736	3,517	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	270,38	165.202,68	3.307.366,71	#¡REF!	#¡REF!	#¡REF!
82,266	20,044	6,965	5,419		4,104	2,878	3,699	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	273,82	167.302,57	3.309.466,61	#¡REF!	#¡REF!	#¡REF!
82,266	20,044	6,965	5,419		4,104	2,878	3,699	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	273,82	167.302,57	3.309.466,61	#¡REF!	#¡REF!	#¡REF!
82,266	20,044	6,965	5,419		4,104	2,878	3,699	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	273,82	167.302,57	3.309.466,61	#¡REF!	#¡REF!	#¡REF!
82,266	20,044	6,965	5,419		4,104	2,878	3,699	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	273,82	167.302,57	3.309.466,61	#¡REF!	#¡REF!	#¡REF!

82,266	20,544	6,796	5,287		4,004	3,023	3,886	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	277,21	169.376,44	3.311.540,47	#¡REF!	#¡REF!	#¡REF!
82,266	20,544	6,796	5,287		4,004	3,023	3,886	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	277,21	169.376,44	3.311.540,47	#¡REF!	#¡REF!	#¡REF!
82,266	20,544	6,796	5,287		4,004	3,023	3,886	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	277,21	169.376,44	3.311.540,47	#¡REF!	#¡REF!	#¡REF!
82,266	20,544	6,796	5,287		4,004	3,023	3,886	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	277,21	169.376,44	3.311.540,47	#¡REF!	#¡REF!	#¡REF!
82,266	21,044	6,634	5,161		3,909	3,172	4,077	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	280,57	171.425,22	3.313.589,25	#¡REF!	#¡REF!	#¡REF!
82,266	21,044	6,634	5,161		3,909	3,172	4,077	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	280,57	171.425,22	3.313.589,25	#¡REF!	#¡REF!	#¡REF!
82,266	21,044	6,634	5,161		3,909	3,172	4,077	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	280,57	171.425,22	3.313.589,25	#¡REF!	#¡REF!	#¡REF!
82,266	21,044	6,634	5,161		3,909	3,172	4,077	0,801	NO	2,37	#¡REF!	#####	#####	#¡REF!	#¡REF!	#¡REF!	#¡REF!	##########	########	280,57	171.425,22	3.313.589,25	#¡REF!	#¡REF!	#¡REF!

ANEXO 3: ESTIMACIÓN DEL FRANCOBORDO PRELIMINAR

INTERNATIONAL CONVENTION ON LOAD LINES 1966/1988

Moulded Breadth (B)	19,044	m
Least Moulded Depth	7,908	m
85% Least Moulded Depth	6,722	m
Freeboard deck thickness at side	10	mm
Freeboard Depth (D)	7,918	m
Lenght of the waterline at 6,722 m of depth	84,75	m
Lenght betw. Perp. at 6,722 m of depth	75,55	m
Freeboard Lenght (L)	81,36	m
Volume without appendages at 6,722 m of depth	7540	m^3
Block coefficient	0,7239	
Recess in freeboard deck, side to side, of	0	m < 1m

Upper line of the exposed deck is the freeboard deck

R-27 Types of ships — *Applicable*

Type of ship (A,B,Br,B60) B

R-28 Tabular Freeboard — *Applicable*

Table	
L	*freeboard*
81	905
82	923

L	*freeboard*
81,36	912

R-28	912

R-29 Correction for ships under 100 m in lenght — *Not Applicable*

Effective lenght of superestructure (E)	40,512	m
Lenght of trunks	0	m
Effective lenght of superestructure (E1)	40,512	m

R-29	

R-30 Correction for block coefficient — *Applicable*

R-28	912
R-29	
freeboard	912

Factor 1,0323

R-30	30

R-31 Correction for depth — *Applicable*

Enclosed superestructure lenght	20,2	m	<0.6*L
Height of superestructure	12,8	m	
Standard Height	1,864	m	

R	169,5	Standard Height correction	1
Correction	423		

R-31	423

R-32 Correction for position of deck line *Not Applicable*

R-32

R-32.1 Correction for recess in freeboard deck (not side to side) *Not Applicable*

Volume of the recess	m^3	
Waterplane area at 6,722 m draft	m^2	

R-32.1

R-33 Standard height of superstructure (in m) *Applicable*

Raised quarterdeck	*All Other superestructures*
1,276	1,864

R-34/35 Effective lenght of superstructure (in m) *Applicable*

Superestructure	*Lenght (S)*	*Sup. br. (b)*	*Ship br. (Bs)*	*Height*	*Effective Lenght (E)*
Forecastle	18,000	6,000	16,764	6,000	
center	40,512	11,000	11,000	2,800	40,512
Poop	0,000	0,000	17,896	2,800	

Raised quarterdeck	*Lenght (S)*	*Sup. br. (b)*	*Ship br. (Bs)*	*Height*	*Effective Lenght (E)*

R-36 Effective lenght of trunks (in m) *Applicable*

Trunk	*Lenght (S)*	*Sup. br. (b)*	*Ship br. (Bs)*	*Height*	*Effective Lenght (E)*
Centre	0,000	0,000	18,800	2,800	

R-37 Deduction for superstructures and trunks *Applicable*

Lenght of Superestructure	40,512	m

Lenght of Trunks	0	m
Effective Lenght (E)	40,512	m
Effective Lenght (E)	0,4979	*L
Deduction for 1L	829	mm

Table 37.1	
E	%
0,4	31
0,4979	*40,8*
0,5	41

R-37	-339

R-38 Sheer *Applicable*

Standard Sheer Profile					
Station	*Ordinate*	*Factor*	*Product*		
After perpendicular	928	1	928		
1/6 L from A.P.	412	3	1236		
1/3 L from A.P.	104	3	312		
Amidships	0	1	0	After Sheer	2476
Amidships	0	1	0		
1/3 L from A.P.	208	3	624		
1/6 L from A.P.	824	3	2472		
Forward perpendicular	1856	1	1856	Forward Sheer	4952

Sheer Profile						
Station	*Ordinate*	*Sum for Le=L*	*Total*	*Factor*	*Product*	
After perpendicular	0	0	0	1	0	
1/6 L from A.P.	0	0	0	3	0	
1/3 L from A.P.	0	0	0	3	0	
Amidships	0	0	0	1	0	After Sheer
Amidships	0	0	0	1	0	
1/3 L from F.P.	0	0	0	3	0	
1/6 L from F.P.	0	0	0	3	0	
Forward perpendicular	0	0	0	1	0	Forward Sheer

Forward and After corrections for Sheer be allowed — no deja reducir nada por el exceso en popa

Corrected After Product Difference	-2476
Corrected Forward Product Difference	-4952

Sheer credit for poop or forecastle

	Real	**Standard**	**Difference**	**s**
Forecastle	6000	1864	4136	305
Poop	2800	1864	936	0

After Sheer variation	-309	
Forward Sheer variation	-313	
Sheer variation	-311	media de los dos valores

Total lenght of enclosed superestructures (S1)	58,512 m		
Extension in midships of superestructures (over L)	1 *L		extension del medio hacia los costa

Factor	0,3904	Correction	122 mm

Freeboard correction	122 mm	
		R-38 122

R-39.1 Minimum bow height — *Applicable*

Waterplane area forward of L/2 at draught d1 (Awf)	230,40 m2		superficie en flotacion desde L/2 ha
L	81,36	d1	6,722
B	19,044	Cb	0,7239
		Cwf	0,2974

Minimun bow height (Fb)	7192 mm	
Bow depth corrected for R39	26 m	altura real desde la linea basa hasta la parte alta de la su
Minimum bow heigth freeboard	-10890 mm	
Salt water freeboard	1148 mm	
		R-39.1 0

R-39.2 Reserve of bouyancy — *Applicable*

F0	912 mm		
f1	1,0323		
f2	423 mm		
fmin	1365 mm		
Minimun projected area	28,74 m2		
Actual projected area	29,64 m2		
Freeboard correction	0 mm	R-39.2	0

R-40 Minimum freeboards — *Applicable*

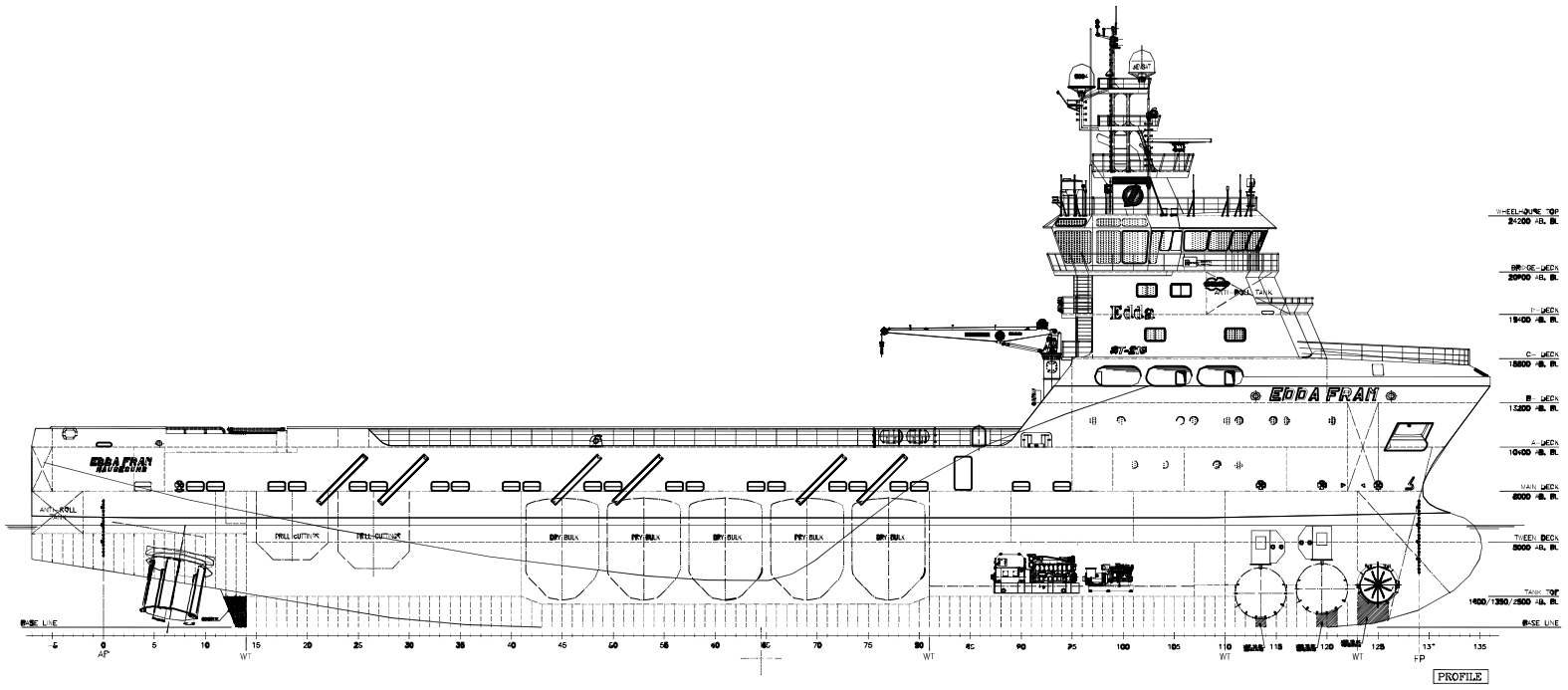
Minimun freeboard without R-32: 50 mm

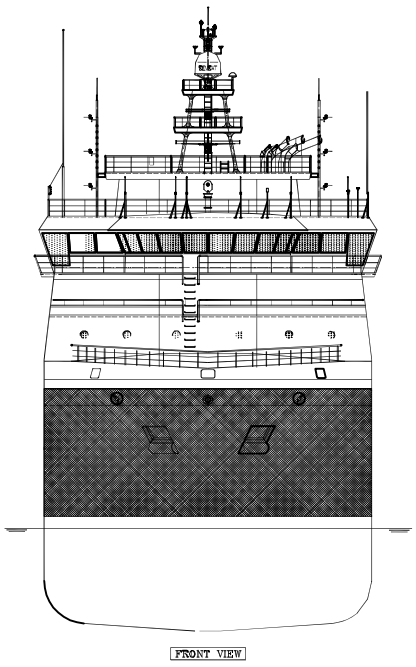
R-28	912 mm	Freeboard in Salt Water	1148 mm
R-29	mm		
R-30	30 mm	*Minimun Summer Freeboard*	*1148 mm*
R-31	423 mm	*Maximun Summer Draught*	*6770 mm*
R-32.1	mm		
R-37	-339 mm	Maximun Scantling Draught	6150 mm
R-38	122 mm	Maximun Stability Draught	6000 mm
Sum	**1148 mm**		

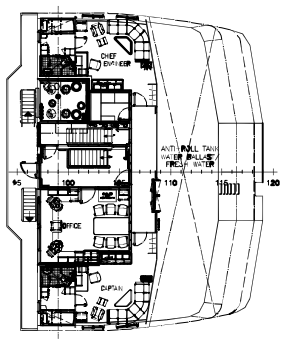
R-39.1	0 mm	***Summer Freeboard 1918 mm***
R-39.2	0 mm	***Summer Draught 6000 mm***
Sum	**1148 mm**	***Tropical Freeboard 1918 mm***
		Winter Freeboard 2043 mm
R-32	0 mm	***Winter N. Atlantic Freeboard 2093 mm***
		Fresh Water 1148 mm

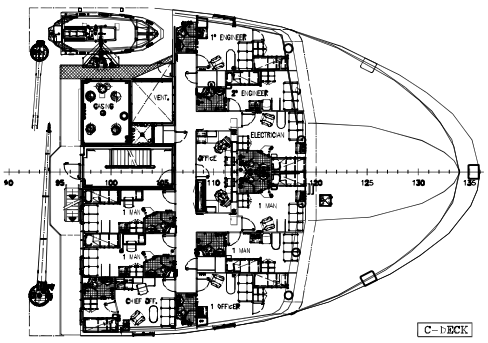
Displacement at 6 m	0	ton
TPCM at 6 m	4	ton/cm

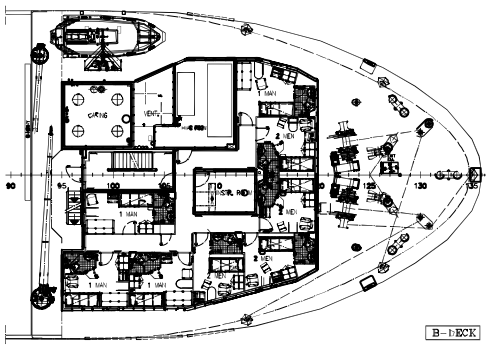
ANEXO 4: PLANO DEL BUQUE PARA ESTIMACIÓN DE FRANCOBORDO

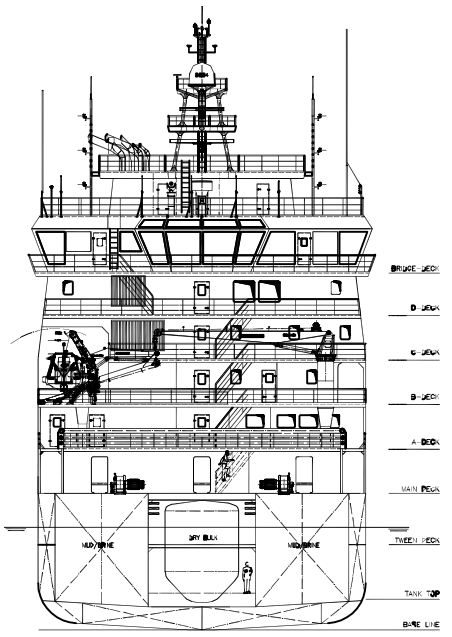


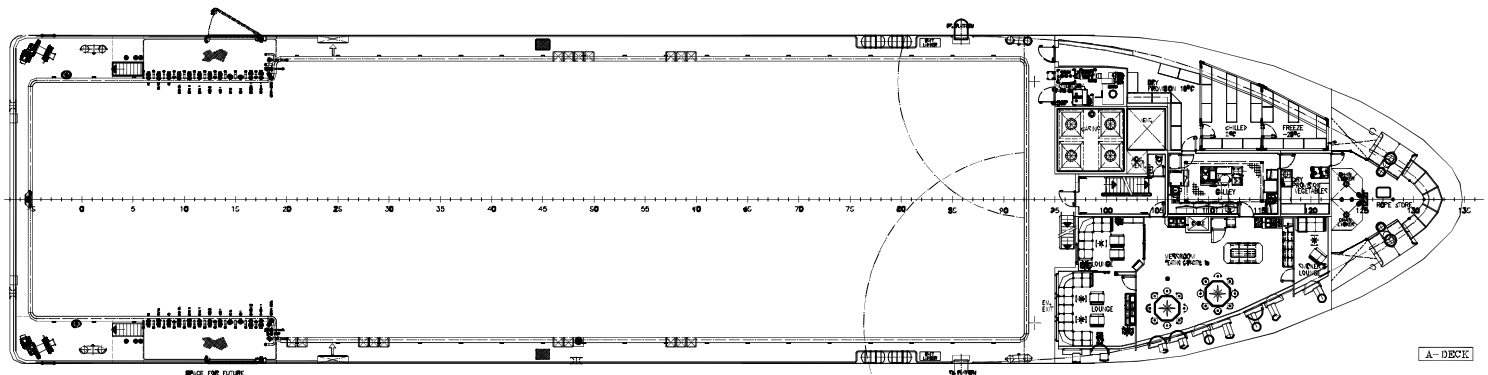


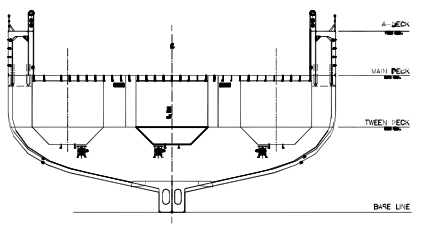


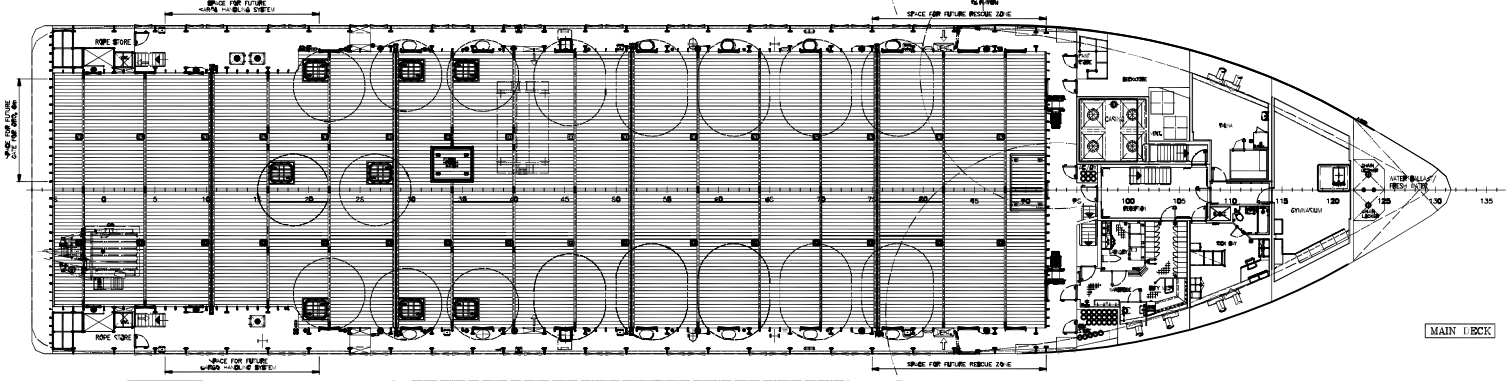


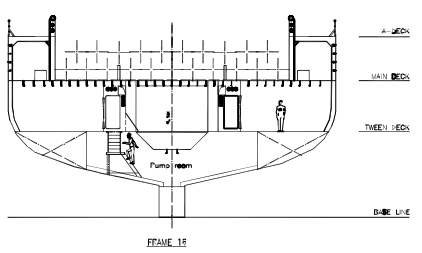


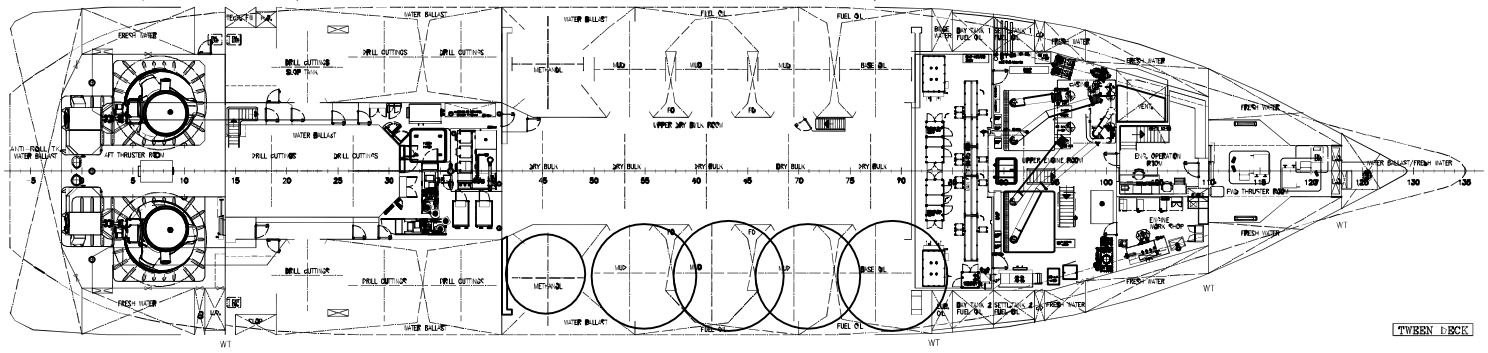


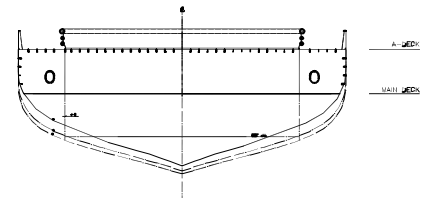


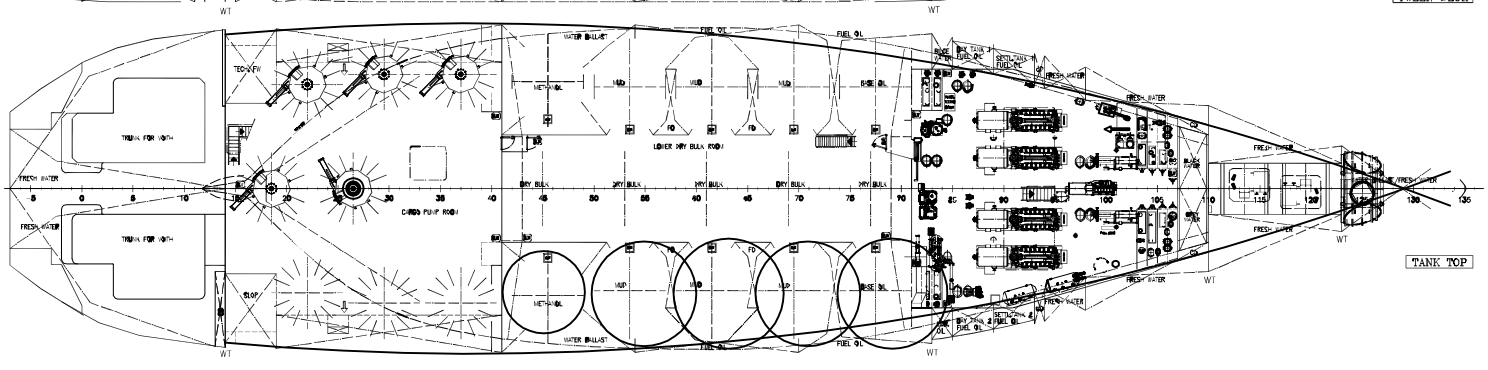


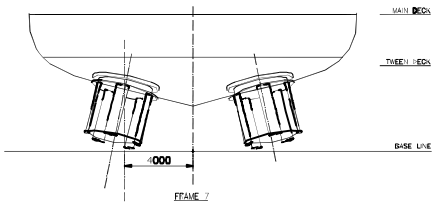


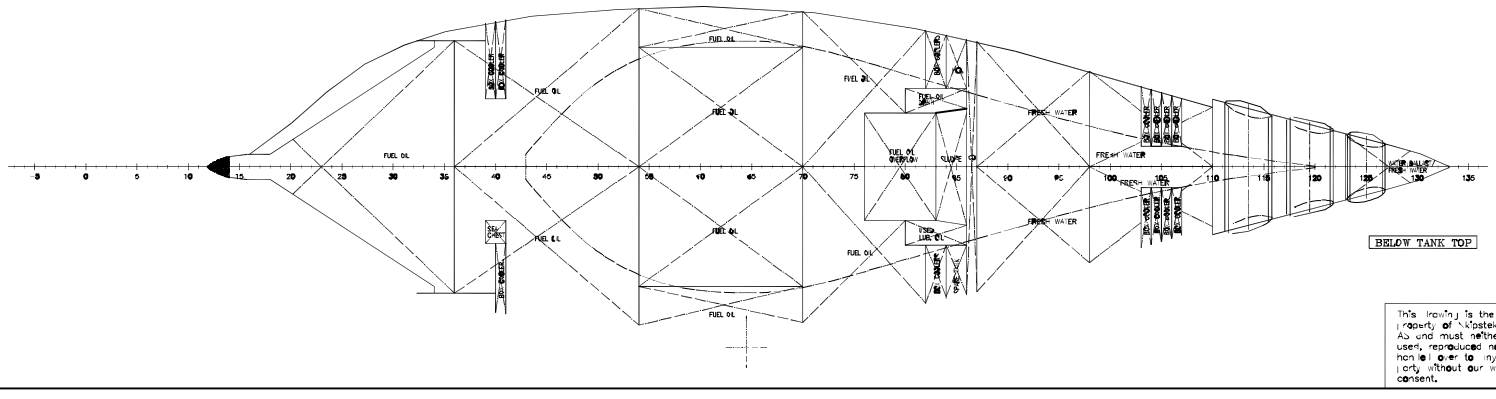












MAIN DIMENSIONS:

LENGTH O.A.	85,60 m
LENGTH P.P.	77,10 m
BREADTH	19,20 m
DEPTH TO TWEEN DECK	5,00 m
DEPTH TO MAIN DECK	8,00 m
DEPTH TO A-DECK	10,60 m
DEPTH TO B-DECK	13,20 m
MAX. DRAUGHT	6,50 m
FRAME SPACIN ;	600 mm

ACCOMMODATION FOR 22 PERSONS

CLASS: DNV ✠1A1, SUPPLY VESSEL, SF, EO, DYNPOS AUTR, HL 2,8 , dk=, LFL*, ICE-C, CLEAN, COMF-C-V, OIL REC, NAUT OSV

REV:	DESCRIPTION:	DATE APPR:	DATE REV:	SIGN:
A	MISC. UPDATE.		11.07.05	BH
B	MISC. UPDATE.		16.08.05	BH
C	MISC. UPDATE		*8.11.*5	BH
D	MISC. UPDATE		12.01.06	BH
E	UPDATE ACCOMMODATION.		28.02.06	BS
F	MISC. UPDATE		18.*.*6	BH
G	VARIOUS UPDATES.		28.08.06	AØ.
H	UPDATED ACCORDING OWNER COMMENTS.		29.09.06	AØ.
I	MISC. UPDATE		*2.*.*7	AØ.
J	AS BUILT		29.06.07	AØ.

OWNER: ASTILLEROS GONDAN	YARD NO. 432		DRWG. NO. A0
TITLE: GENERAL ARRANGEMENT	SCALE 1:150	DATE 16.03.05	
		DES. Jag/bok	
SKIPSTEKNISK AS		PROJECT NO. 2005054	
CONSULTING NAVAL ARCHITECTS AND MARINE ENGINEERS Hauk Nilsensgt. 4, P.O.Box 2B Sentrum, N-5801 Bergen Tel: +47 70 10 33 44, Telefax: +47 70 10 33 48 E-mail: office@skipsteknisk.no		DRAWING NO. 432-101-001-J	

ANEXO 5: INFORMACIÓN BUQUES BASE DE DATOS

DAMEN MULTI PURPOSE VESSEL 8116

KBV003

GENERAL

YARD NUMBER	551012
DELIVERY DATE	May 2010
BASIC FUNCTIONS	Fishery protection, environmental protection, traffic control, towing, fire fighting, oil recovering, rescue/salvage operations, ROV support
CLASSIFICATION	Germanischer Lloyd ✠100 A5 E4 DPI Tug Oil Recovery Vessel Chemical Recovery Vessel Environmental passport ✠MC E4 AUT FF1 RP2. GL Statement for SF DK (+) HA (+) ICS CONF V (2) C(2) Discriptive note ShipRight SCM & PCWBT
FLAG	Swedish
OWNER	Kustbevakning, Sweden

DIMENSIONS

LENGTH O.A.	81.30	m
LENGTH B.P.P.	70.60	m
BEAM MLD.	16.00	m
DEPTH MLD.	7.50	m
DRAUGHT SUMMER	6.50	m
DEADWEIGHT (SUMMER)	2170	t

TANK CAPACITIES

FUEL OIL	475	m^3
POTABLE FRESH WATER	60	m^3
TECHNICAL FRESH WATER	60	m^3
RECOVERED OIL	800	m^3
CHEMICAL	180	m^3

PERFORMANCES (TRIALS)

SPEED (AT 5.00 M DRAUGHT)	16.0	kn
BOLARD PULL	100	t

PROPULSION SYSTEM

MAIN ENGINES	Diesel-Electric, 690 V, 50 Hz
PROPULSION POWER	2x 3300 ekW at 900 rpm
PROPELLERS	2x 3000 mm, FP, Azimuth in nozzle
RETRACTABLE BOW THRUSTER	1x 850 ekW, 1750 mm, FP
BOW THRUSTER	1x 415 ekW, 1350 mm, FP

AUXILIARY EQUIPMENT

MAIN GENERATOR SETS	3x 3516C, each 1859 ekW at 1500 rpm 2x 3512C, each 1305 ekW at 1500 rpm
AUX. GEN. SET	1x C18, 452 ekW at 1500 rpm
EMERGENCY GEN. SET	1x 3406C, 240 ekW at 1500 rpm

DECK LAY-OUT

MAIN CRANE	1x 24 t at 11 m, max reach 21 m
MAUXILIARY CRANES	1x 3.5 t at 17 m 1x 1.5 t at 17 m
STORE CRANE	1x 0.5 t at 11 m
TOWING WINCH	1x double drum, 100 t pull, 189 t brake
ADVANCING OIL REC. SYSTEM	2x Sweeping booms & in-built brush type skimmers
OIL BOOMS	2x 300 m, 1x 500 m
SKIMMERS	1x 100 m^3/hr, 1x 20 m^3/hr, 1x10 m^3/hr
FAST TENDER CRAFT	1x 10.5 m, 35 kn
FAST RESCUE CRAFT	1x 7.5 m, 35 kn
LIFEBOAT	1x 50 p - totally enclosed

CHEMICAL RECOVERING LAY-OUT

ACCOMMODATION	Citadel 50 mbar overpressure

ACCOMMODATION

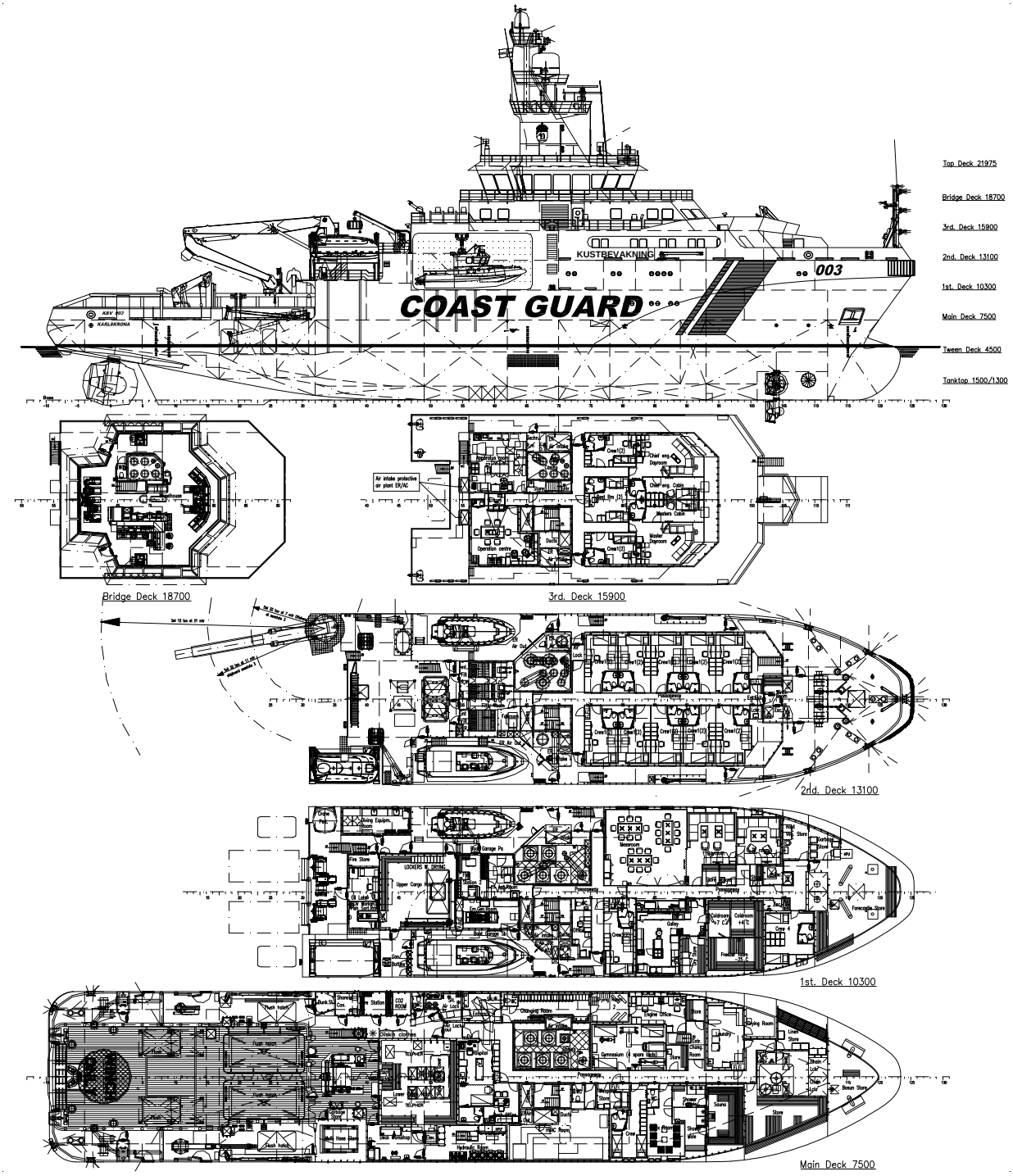
CREW	44 persons

NAUTICAL AND COMMUNICATION EQUIPMENT

RADAR SYSTEM	1x X-band and 1x S-band
DP – SYSTEM	DP1
GMDSS	Area A4

SURVEY EQUIPMENT

SURVEY EQUIPMENT	1x multi beam echo sonar 1x ROV



DAMEN MULTI PURPOSE VESSEL 8116

KBV003

DAMEN SHIPYARDS GORINCHEM

Member of the DAMEN SHIPYARDS GROUP

Industrieterrein Avelingen West 20
4202 MS Gorinchem

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4200 AA Gorinchem
The Netherlands

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fax +31 (0)183 63 21 89

info@damen.nl
www.damen.nl

DAMEN OSRV 1050

GENERAL

Basic functions	Oil spill response
Classification	Lloyd's Register ✠ 100A1 Offshore Supply Ship, Fire-Fighting Ship 1 (2400 m³/h) with water spray, Oil Recovery, LFPL, ✠ LMC, UMS, DP(AM)

DIMENSIONS

Length o.a.	67.10	m
Beam mld.	14.00	m
Depth mld.	6.00	m
Draught summer (base)	5.00	m
Deadweight (summer)	1600	t
Free deck space	230	m^2

TANK CAPACITIES

Ballast water	580	m^3
Fuel oil (service)	300	m^3
Potable water (service)	100	m^3
Sewage	25	m^3
Roll reduction	68	m^3
Recovered oil	1050	m^3
Fuel oil cargo	300	m^3
Dispersant tank	10	m^3
Slop tank	20	m^3

PERFORMANCES (APPROX.)

Speed (at 3.5m draught)	13	kn

PROPULSION SYSTEM

Main engines	Diesel-Electric, 690 V, 60 Hz
Propulsion power	2x Electric motors of 1500 kW each
Azimuthing thrusters	2x 2300 mm FP propellers in nozzles
Bow thrusters	2x 600 kW, 1750 mm, FPP

AUXILIARY EQUIPMENT

Networks	690 V, 440 V and 230 V – 60 Hz
Main generator sets	3x 1540 ekW at 1800 rpm
Emerg. generator set	1x 72 ekW at 1800 rpm
Shore supply	1x 200 A

External fire-fighting

Monitors	4x 1200 m^3/hr
Pumps	1x approx. 3500 m^3/hr

DECK LAY-OUT

Anchor mooring winch	1x	Hydraulic, with 2 warping heads and rope storage drums
Capstans	2x	Electric, each 5 t pull
Deck crane	1x	Knuckle boom, 3.5 t @ 8 m (harbor)
Tugger winches	2x	Hydraulic, each 5 t pull
Stern roller	1x	SWL 10 t, ø 0.6 m length 8 m, lateral rollers ø 0.3 m height 1 m
Rescue craft	1x	6 persons, speed 6 kn

OIL SPILL RESPONSE EQUIPMENT

Inflatable containment booms	2x	Self-inflating oil containment boom, stored on hydraulic winches; 1x 400 m, 1x 300 m
Skimmer system	1x	Skimmer head for low-viscous oil
	1x	Skimmer head for high-viscous oil
Skimmer capacity	250 / 350 m^3/hr	
Transfer system	2x 200 m³/hr	
Dispersant system	2x	Spray booms Spray capacity 30 m³/hr at 7 bar
Detection system	1x	Oil detection radar
Service craft	1x	13 persons, speed 12 kn, 4 t bollard pull, 2x 200 kW inboard, water jets

CARGO HANDLING SYSTEM

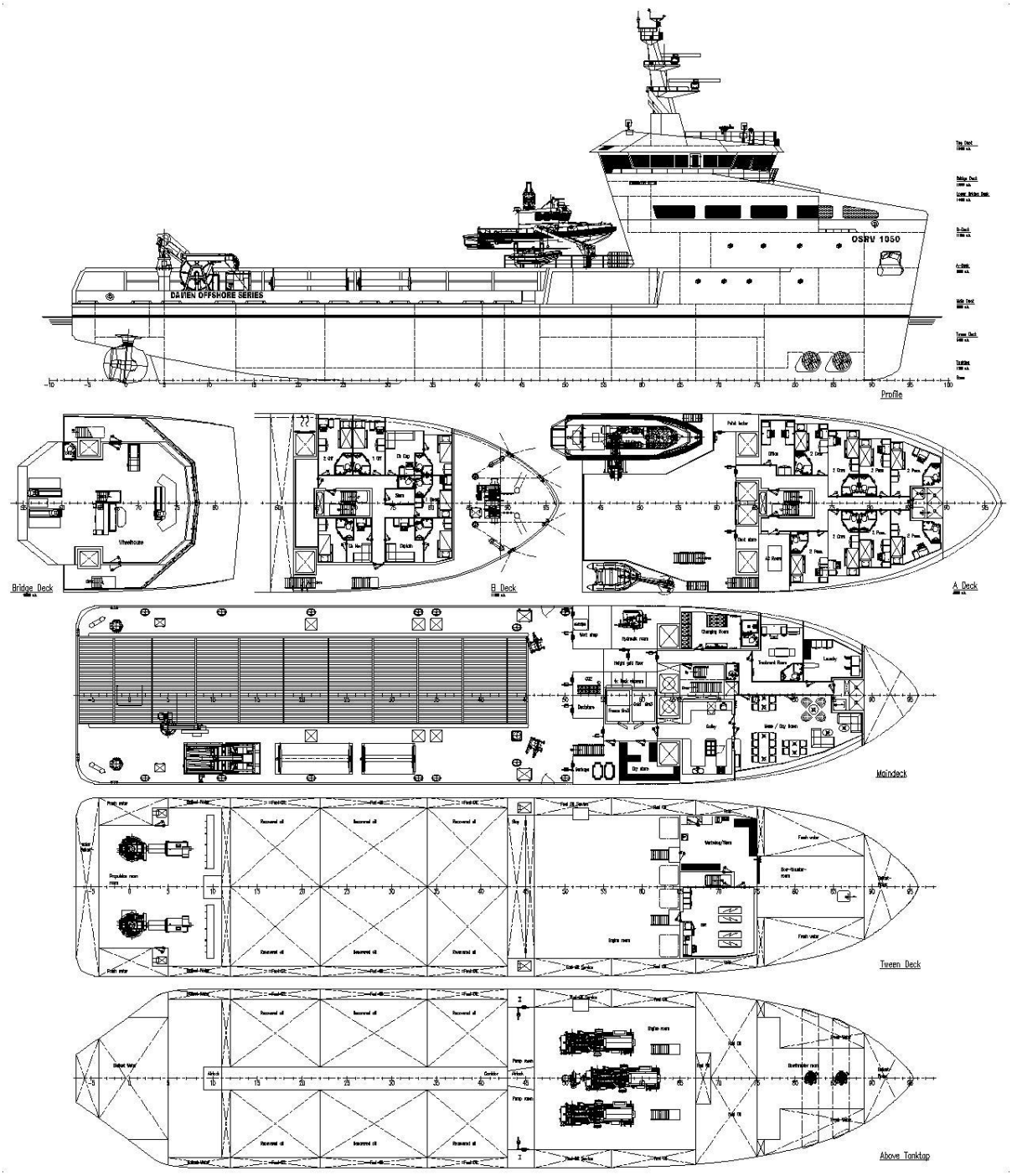
Fuel oil pumps	2x 70 m³/hr
Fresh water pumps	2x 70 m³/hr
Tank cleaning system	20 m³/hr at 60°C

ACCOMMODATION

Crew	Upto 24 persons in single and double bed cabins

NAUTICAL AND COMMUNICATION EQUIPMENT

Nautical	Radar X-band + S-band, ECDIS, Conning
DP – system	DP 1 (Optional DP-2)
GMDSS	Area A3



DAMEN OSRV 1050

DAMEN SHIPYARDS GORINCHEM

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ESVAGT AURORA

TYPE OF SHIP: STANDBY VESSEL
OWNER: ESVAGT AS
FLAG: DENMARK
DELIVERY: 2012

MAIN CHARACTERISTICS

- Length o.a.: **87,00 metres**
- Length b.p.: **81,00 metres**
- Beam, moulded: **17,00 metres**
- Depth to main deck: **7,50 metres**
- Draft, max: **6,00 metres**
- Deadweight at 6,00 m: **2.300 tons**
- Accommodation: **40 persons**
- Speed : **16,5 knots**
- Bollard pull: **100 tons**

TANK CAPACITIES

- Fuel oil: **1.200 m3**
- Fresh water: **300 m3**
- Ballast: **1.400 m3**
- Oil Recovery: **1.550 m3**
- Liquid mud: **650 m3**
- Dispersant: **50 m3**
- Urea: **50 m3**
- Lub. oil: **30 m3**

PROPULSION

Diesel- electric propulsion

- Output el. motors: **2 x 3.300 kW at 0-750 rpm**
- Main Propellers: **2 azimuth CPP**
- Forward retractile thruster: **1 x 850 kW el. conv. CPP**
- Forward tunnel thrusters: **2 x 883 kW el. conv. CPP**

DECK MACHINERY

- Towing winch: **100 Tons**
- Brake holding: **250 tons 1st layer**
- 1 Deck Crane: **5 Tons at 13 mts**
- 2 Tugger winch: **15 Tons at 30 m/min**
- 2 Capstans: **10 Tons at 20 m/min**
- 1 Towing pins and Srrk Jaw: **250 Tons**
- 1 Stern roller: **250 Tons**

Stern dock for launching and recovery of DC/FRC

AUXILIARY GENERATING SETS

- Diesel generating sets: **4 x 1.260 ekW at 900 rpm + 2 x 2.100 ekW at 1800 rpm**
- Emergency generator set: **1 x 350 ekW. at 1.800 rpm**

DYNAMIC POSITIONING SYSTEM: DP 2

FIFI I+II

CLASS: DNV

DnV, + 1A1, Standby Rescue (S), Tug, , ICE-1C, OILREC, SF, E0, Fi Fi I+II, DYNPOS-AUTR, NAUT-OSV(A), CLEAN DESIGN, Winterised Basic, DEICE, COMF-V(3), BIS, HL(+).

NOFO 2009

DON INDA

MULTIPURPOSE, TOWING, SALVAGE, DIVING AND OIL RECOVERY POLLUTION CONTROL VESSEL

TYPE OF SHIP: TOWING & SALVAGE

OWNER: SOCIEDAD DE SALVAMENTO MARÍTIMO (SASEMAR)

FLAG: SPAIN

DELIVERY: 2006

MAIN CHARACTERISTICS

- Length o.a.: **80,00 metres**
- Length b.p.: **69,30 metres**
- Beam, moulded: **18,00 metres**
- Depth to main deck: **8,25 metres**
- Draft, design: **6,00 metres**
- Deadweight at 6,60 m: **3.050 tons**
- Accommodation: **16 crew + 6 reserve**
- Speed: **17,5 knots**
- Bollard pull: **220 tons**
- Endurance: **9.000 miles**

DECK MACHINERY

- 1 Towing winch aft: **310 Tons at 8 m/min**
- Brake holding: **550 Tons 1st layer**
- 1 Towing winch forward: **95 Tons at 10 m/min**
- 2 Deck Cranes: **20 Tons at 15 mts**
- Tugger winch: **2 x 10 Tons at 16,5 m/min**
- Towing pins: **300 Tons**
- Karm Fork: **600 Tons**
- "A" Frame: **50 Tons at 8 m/min**
- 2 Capstans: **10 Tons**

PROPULSION

- Main engines: **4 BERGEN B32:40L8P**
- Output: **4 x 4.000 kW at 750 rpm**
- Main Propellers: **2 x CPP**
- Forward retractile thruster: **1 x 736 kW**
- Forward tunnel thruster: **1 x 883 kW**
- Aft tunnel thrusters: **2 x 883 kW**

TANK CAPACITIES

- Fuel oil: **1.500 m3**
- Fresh water: **540 m3**

- Ballast: **900 m3**
- Oil Recovery: **1.700 m3**
- Dispersant: **28 m3**
- Foam: **40 m3**

MISCELLANEOUS

- Dynamic position: **DP2**
- Skimmers: **400 m3/h**
- Oil rec. tank pumps: **4 x 100 m3/h**
- Inert Gas Plant: **40 Nm3/h**
- Floating arms: **2 x 15 m**

AUXILIARY GENERATING SETS

- Type: **2 x Diesel**
- Output: **2 x 1.680 KVA**
- Shaft generators: **2 x 2.750 KVA**
- Emergency generator: **1 x 225 kW**

FI-FI SYSTEM: FI-FI II

- Monitors: **3 x 2.400 m3/h**
- Spray water system: **600 m3/h**

CLASS: BV

I + Hull + Mach Tug, Fire Fighting 2 Water Spray, Special Service, Oil Recovery Ship, Unrestricted Navigation, + AUT-UMS, + Dynapos-Am-R.

DYNAMIC POSITIONING SYSTEM: DP II

65m AHTS 2016 – DP II – Bow Thruster – DWT 1500

Length: 65m Beam: 16m Draft: 5m DWT: 1500 BHP: BP: Class: ABS

Details:

65m AHTS 2016 - DP II - Bow Thruster - DWT 1500 For Sale

Inspection China

Delivery Promt

Built 2016 China

Class ABS +A1 (E) Offshore Support Vessel, (Supply, AH, Tow, FFV 1, SPS)+ AMS + DPS-2

Length Overall 65.00m

length BP: 58.50 m

Breadth Moulded 16.00 m

Depth Moulded 6.20m

Design Draft 5.20 m

Complement 50 P

DWT 1500

Deck cargo abt 600Ton

Dear space 435 sqm

Main Engines Niigata, 2 X3000PS @800rpm

Generators 3 x Cat 450kw

Shaft Generator stamford 2 x 900kw

Emergency Generator 1 x Cummins 80 kw

Bow Thruster Kawasaki 8T, 5 x 2

Stern Thruster Kawasaki x 1

Deck Crane 1 x 2T@15M

Max Speed 13 knots

Bollard Pull Approx 80 tons

DP2

F.O. 570cbm

F.W. 300 cbm

D.W./S.W.B 550cbm

Dry Bulk 150cbm

Liquid Mud/ Brine 370cbm

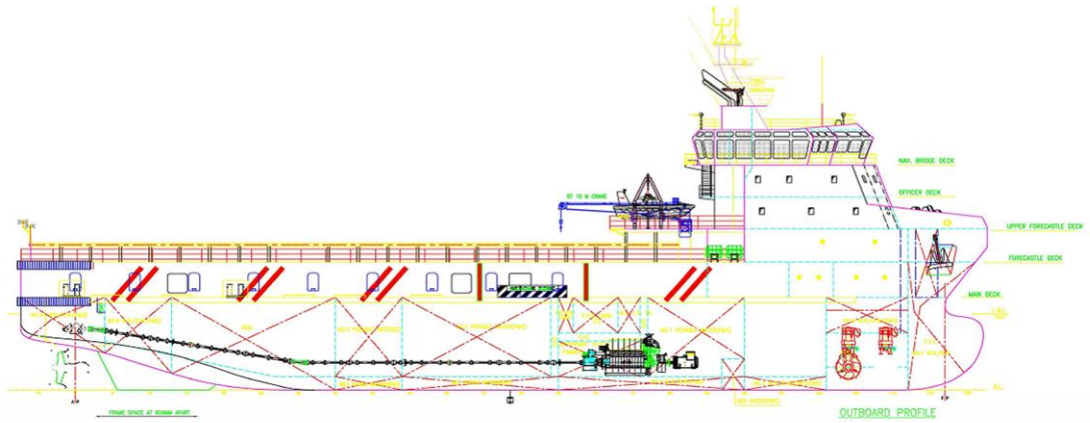
Lub oil 10cbm

Dirty Oil 10cbm

Foam 10cbm

Dispersant 10cbm

78M PLATFORM SUPPLY/ OIL RECOVERY VESSEL(Focal 522)



MAIN CHARACTERISTICS

Length over all :		78.00 m
Length BP :		70.20 m
Beam moulded:		18.60 m
Depth moulded :		7.80 m
Draft designed :		6.00 m
Draft scantling :		6.40 m
Max Deadweight:		Abt. 4,000 t
Accommodation:		
	8 x 1-berth cabins:	8 men
	4x 2-berth cabins:	8 men
	11 x 4-berth cabins:	44 men
	Total:	60 men
Deck cargo space:		Abt. 800 m2
Deck design load:		7.5 t / m2
Deck cargo capacity:		1,500 t
Performance Speed:		13 knots

CLASSIFICATION

BV 1 +HULL +MACH SUPPLY VESSEL OIL, PRODUCT (FP>60 DEG C) LHNS, FIRE-FIGHTING SHIP 1 WATER SPRAYING, OIL RECOVERY SHIP, SPECIAL SERVICE - SPECIAL PURPOSE SHIP, UNRESTRICTED NAVIGATION, +DYNAPOS AM/AT R, INWATERSURVEY, AUT-UMS

TANK CAPACITY

Potable water:	600m3
Fuel oil (Incl. cargo):	1,440 m3
Cargo fuel oil:	600 m3
Drill water / Water ballast:	1,250 m3
Dry bulk cargo tanks:	300 m3
Mud / Brine (SG 2.5) :	800 m3
Rec. oil:	1,000 m3
Base oil:	200 m3
Methanol / Chemical:	200 m3

133 - C-Warrior

Delivered: June 2015
Owner: Edison Chouest Offshore.
Design: UT 755 LC
Type: PSV

Current Position

131 - North Barents

Deilvered: January 2017
Owner: Gulf Rederi AS
Design: ST - 216 Arctic
Type: PSV

Current Position

130 - North Cruys

Delivered: February 2014
Owner: Gulf Rederi AS
Design: ST - 216 Arctic
Type: PSV

Current Position

129 - North Pomor

Delivered: July 2013
Owner: Gulf Rederi AS
Design: ST - 216 Arctic
Type: PSV

Current Position

128 - FS Cygnus

Delivered: November 2014
Owner: Fletcher Shipping Ltd.
Design: UT 755 LC
Type: PSV

Current Position

126 - C-Viking

Delivered: July 2012
Owner: Duh Boats 2 Partnership C.V.
Design: UT 755 LC
Type: PSV

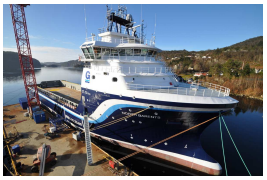
Current Position

125 - Ocean Scout

Delivered: May 2013
Owner: Atlantic Offshore
Design: Ut 755 LC
Type: PSV

Current Position

131 - North Barents



Delivered: January 2017

Owner: Gulf Rederi AS

Design: ST - 216 Arctic

Homeport: Sandnes, Norway

Type: PSV

Class: Det norske Veritas +1A1, SF, E0, DK(+), Dynpos AUTR, HL(2,8), LFL*, CLEAN DESIGN, COMF-C(3)-V (3), NAUT OSV (A), ICE-1B, WINTERIZED BASIC, SPS, OIL RECOVERY.

Main Particulars:

Gross tonnage: 4513 t

Length o.a.: 92,60 m

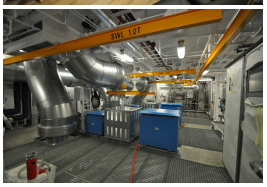
Length p.p.: 82,40 m

Beam:19,20 m

Depth, main deck: 8,50 m

Draught, loaded: 6,95 m

Speed: 16 knots



Capacities:

Fuel Oil: 1200m^3

Fresh Water: 1000m^3

Water Ballast: 887,43m^3

Mud: 800 m^3

Brine: 340 m^3

ORO: 1900 m^3

Dry bulk: 360 m^3

Engine: Diesel-electric, total 8,400 kW

Accommodation: 40 men

Skipsteknisk Brochure

More articles about 131 - North TBN

- Ny kontrakt! Bygg nr. 131
- 131 - Construction has commenced
- 131 - Assembly has commenced
- 131 - Construction update
- 131 - Construction update week 3
- 131 - Pictures from Desan Shipyard
- 131 - Construction update week 13

124 - Caspian Provider

Delivery: July 2011
Owner: Topaz Marine and Energy Ltd
Design: UT 755 LC
Type: PSV

Current Position

123 - Havila Fanø

Delivered: August 2010
Owner: Havila Shipping ASA
Design: Havyard 832 CD
Type: PSV

Current Position

122 - Stril Mermaid

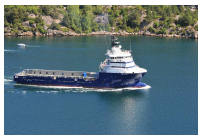
Delivered: March 2010.
Owner: North Sea Safety AS
Design: Havyard 832 CD RS.
Type: PSV/Standby

Current Position

121 - Stril Mariner

Delivered: October 2009
Owner: Simon Møkster Rederi AS
Design: Havyard 832 CD RS
Type: PSV/Standby/Oil Recovery

Current Position



120 - Rem Star

Delivered: June 2009
Owner: Rem Star AS, Fosnavåg
Design: UT 755 LC
Type: PSV

Current Position

119 - Asso Trenta

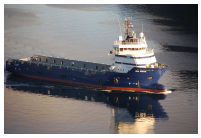
Delivered: March 2009
Owner: Augusta Offshore SpA
Design: UT 755 LC
Type: PSV

Current Position

118 - Rem Mermaid

Delivered: April 2008
Owner: REM Norway AS
Design: MT 6009 - L
Type: PSV

Current Position



117 - Rem Server

Delivered: December 2007
Owner: REM Offshore AS
Design: UT 755 LC
Type: PSV

Current Position

116 - Caspian Qala

Delivered: July 2008
Owner: Caspian Qala Ltd
Design: UT 755 LC
Type: PSV

Current Position

115 - Rem Provider

Delivered: October 2007
Owner: Rem Offshore Norway

- 131 - Hull painting has commenced
- 131 - Construction update week 25
- 131 - Skidding commenced week 27
- 131 - Successful launching
- 131 - Towing has commenced
- 131 - Hull has arrived
- 131 - Outfitting update week 39
- 131 - Outfitting update week 42
- 131 - Outfitting update week 50
- Utsetter nybygg til 2017
- 131 - Outfitting update week 6
- 131 - Soon ready for sea trials
- 131 - Pictures from sea trial
- 131 - Naming Ceremony and delivery

Design: UT 755 LC
Type: PSV

Current Position

114 - Dina Supplier

Delivered: July 2007
Owner: Myklebusthaug Offshore
Design: UT 755 LC
Type: PSV

Current Position

111 - Dina Merkur

Delivered: February 2006
Owner: Myklebusthaug Offshore
Design: UT 755 LC
Type: PSV

Current Position

110 - Portosalvo

Delivered: July 2005
Owner: Portosalvo Ltd, London
Design: UT 755 L
Type: PSV

Current Position

106 - De Vries Tide

Delivered: June 2002
Owner: S.Uglestads Rederi A/S
Design: UT 755 L
Type: PSV

Current Position

103 - Alma Sea

Delivered: January 2003
Owner: I.S. Atlantic Inc., BARBADOS
Design: UT 755 L
Type: PSV/ROV

Current Position

102 - Citadel

Delivered: October 2006
Owner: BUE Marine Ltd, SCOTLAND
Design: UT 755 L
Type: PSV

Current Position

101 - North Mariner

Delivered: February 2002
Owner: Gulf Offshore NS Ltd, Scotland
Design: UT 745
Type: PSV

Current Position

099 - Far Saga

Delivered: October 2001
Owner: Farstad Supply AS, Aalesund
Design: UT 745
Type: PSV/ROV

Current Position

098 - Far Swan

Delivered: May 2001
Owner: Farstad Supply AS, Aalesund
Design: UT 745
Type: PSV/ROV

Current Position

097 - Nomand Carrier

Delivered: May 1995
Owner: Solstad Offshore AS, Norway
Design: UT 745
Type: PSV

Current Position

091 - Havila Lista

Delivered: June 1999
Owner: Havila Supply ASA, Norway
Design: UT 745
Type: PSV

Current Position

087 - Havila Hidra

Delivered: February 1999
Owner: Havila Shipping ASA
Design: UT 745
Type: PSV

Current Position

063 - Stad Sleipner

Delivered: January 1984
Owner: Mithassel & Co A/S
Design: ME 202
Type: Offshore Supply Vessel

Current Position

062 - Stad Neptun

Delivered: March 1983
Owner: Mithassel & Co A/S
Design: ME 202
Type: Offshore Supply Vessel

Current Position

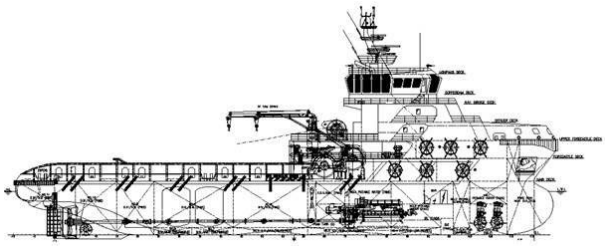
034 - Stad Breeze

Delivered: March 1976
Owner: Mithassel & Co A/S
Type: Supply Vessel

Current Position

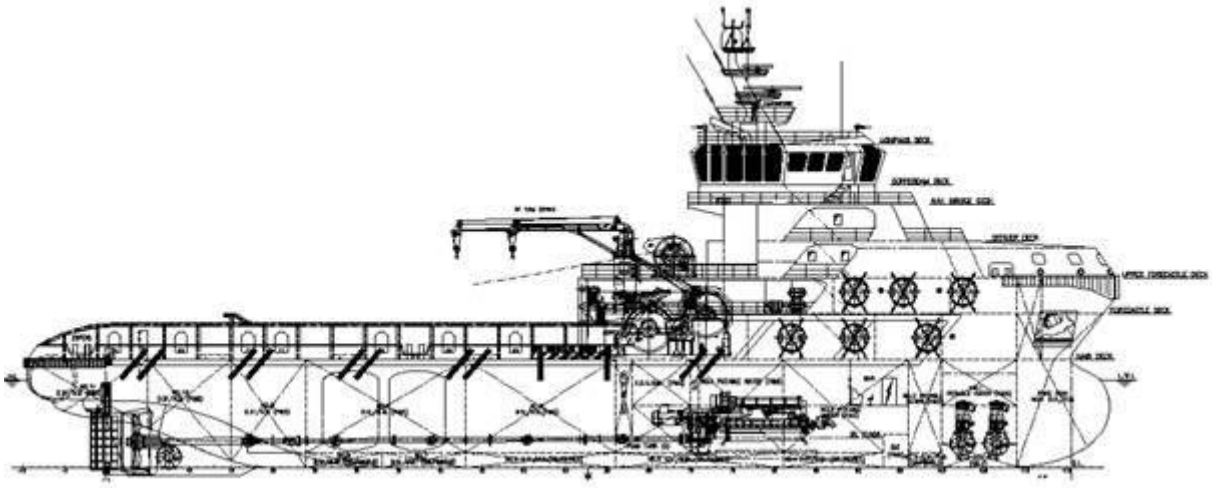
[Enquiry]

2 units AHTS/Oil Recovery Vessel / Anchor Handling Tug Service Vessel



Flag/Port of registration	Singapore
Class	ABS +A1 (E)
Length o.a.	78,00 m
Beam o.a.	18,00 m
Depth	8,00 m
Draft (MLD)	5,20 m
Dead Weight	3000 t on 6,5 m. draft

We can offer for sale two units of AHTS – Anchor Handling Tugs Service : Type AHTS/Oil Recovery Vessels with 78m length and 12000HP
Class: ABS +A1 (E) Offshore Supply Vessel, (Supply-HNLS, AH, Tow, FFV 1) SPS +AMS +DPS-2 UWILD



AHTS Oil Recovery Vessel with 78m and 12000HP

Length O.A.: Appr. 78.00m
Length B.P.: 69.30m
Breadth M.: 18.00m
Depth M.: 8.00m

F.O. Capacity: 900m3
F.O.(MUD): 400m3
Poable Water: 600m3
DW/WB: 1200m3

Cement:250m3
Rig C.L.:250m3
REC. Oil/Brine: 800m3
D. Cargo Space:520m3
D. Cargo Capa.: ABT.1000ton
Bollard Pull: ABT. 150T

M/E: Wartsila 9L#@ 4500KW@750rpm
Gens: CAT C18x2 AC415 450ekW@1500rpm
Gens: CAT C32x1 AC415 830ekW@1500rpm

Shaft Gen.: LSA 53 M80/4P, 2 sets AC415 1920ekW@1500rpm Em. Gen.: Stanford AC415V 94ekW@1500rpm Bow Thruster: 3 x12t, CPP,
Tunnel Towing Winch: Double Drum, Drum Pull (1st layer) 380T @6.0m/min Braking Capacity 500T Shark

Jaw: 450T SWL, 2 sets
Complement: 50 p
Speed: about 14.5Knots

First ship is ready for delivery, second ship has been launched.

PRICE upon request

[Back] | [Print this page] | **[Start enquiry]**

Rimorchiatori Riuniti

OFFSHORE VESSELS AH VARAZZE

AHTS Anchor Handling Tug Supplies

AH Valletta
AH Liguria
AH Camogli
AH Varazze

Deep Sea Tug OSRV/FSIV/General Duties

AHTS ANCHOR HANDLING TUG SUPPLIES "AH VARAZZE"

HARBOUR TUG

RR Group Towage and Harbour services fleet manages 60 harbour tugs, with an average age of less than 10 years and whose Power range from 1.100 to 8.200 BHP.

ASD Azimuth Stern Drive
Conventional Tractor Tug
VOITH Schneider-Propeller

OCEAN GOING VESSELS

RR Group boast a long tradition in the international trade Shipping tankers, dry bulk, chemical carriers and containerships. However after a huge reorganization of this sector the Group presently owns two containerships and one bulk carrier.

Container Ships

GENERAL DETAILS

Classifications
RINA C ✠ , support vessel, oil recovery ship, fire-fighing 2,Green Star 3 Design, Comf Noise C, Comf Vib B, ✠ AUT-UMS, ✠ DYNAPOS AM-R, ✠ MONSHAFT, ✠ INWATERSURVEY, Unrestricted Nav.,Rescue,Stand by, Anchor Handling Stab.

Delivery
November 2014

Design
Roll-Royce Marine – UT 712 CD

Yard
Rosetti Marino Spa – Italy

Flag
Italian

Deadweight
2.874 t at max. draft (7.82 m)

Lenght overall
79.90 m

Breadth moulded
19.20 m

Maximum draft
7.82 m (skeg included)

Propulsion
2 CPP in fixed nozzles
2 off tunnel thrusters forward 883 kW each
2 off tunnel thrusters aft 883 kW each

Main engines
4 off Main Engines, Type Bergen, 2 x 4000 kW each + 2 x 3000 kW each. Total 14000 kW (19.000 BHP)

Generators
Shaft gen. 2 x 2400 kW 440 V 60 Hz

Diesel Generators
2 x 450 kW 440 V 60 Hz

Emergency Generators
1 x 450 kW 440 V 60 Hz

Bollard pull
221 t continuous

Speed
17.0 Knots (Max.)

TOWING/ANCHOR HANDLING WINCHES

AHT Winch Rolls-Royce, configuration Waterfall type, consisting of:

Towing/Working drum
One declutchable drum – 1500 mm x 3200 mm dia.
Length 900 mm + 4350mm. Capacity 3480 m of 86 mm wire.
Dynamic Pull: 400 t – Brake holding on first layer – 500 t

Anchor Handling
One declutchable drum – 1500 mm X 3600 mm dia.
Length 900mm.+ 4350 mm. Capacity 4900m of 86 mm wire
Dynamic Pull: 400 t – Brake holding on first layer – 625 tonnes
One non-declutchable cable lifter for 3 " chain on each side.

Spare/Storage
1 RR Storage reel winch

Capacity
1400 m of 81 mm wire

Secondary Winch
2 off secondary winches – RR – 138 t pull

Capacity main drum
1600 m of rope dia. 203 mm.

Rig Chain-lockers

n. 4 tanks capacity total 400 cbm

Tugger
2 x 24 t

Capstan
2 x 10 t

Towing pins
2 set hydraulic pins

Quarter pins
2 off hydraulic 'Pop-up pins' SWL 200 t

Forks
2 set hydraulic forks – SWL 800 t

Stern Roller
Twin stern Roller 6 x 3,5 m – SWL 550 t

DRY BULK / DISCHARGING CAPACITY

Dry Bulk
n. 4 tanks

Capacity
235 cbm

Compressor
n. 2 x 25 cbm/min. at 80 psi

FIRE FIGHTING SYSTEM

Fire Fighting Class 2

Monitors
2 off Water monitors 3600 cbm/h

Capacity
3600 cbm/h at 16 bar at 1530 rpm

Pumps
2 off Fire Fighting pumps (Kvaener Eureka)

DECK

Deck area
592 sqm / 37 x 16.0 m

Cargo capacity
1200 t

Deck strenght
10 t/sqm

Cargo rail
height of cargo 3 m

Deck crane

1 pc. 360 degrees. 5 tons at 15 m
2 pc. Cargo rail cranes –RR – 3,0 tons at 14.3 m both side

NAVIGATION & COMMUNICATION EQUIPMENT

Joystick control, Autopilot Alphattron, 3 Gyrocompass Alphatron, 1 Radar Jrc X Band, 1 Radar Jrc S Band, 2 Dgps Jrc, 2 Inmarsat-C Foruno, 2 Vhf/Dsc Jrc, 1 Ais Jrc, 1 Mh/Hf/ Jrc, 1 Magnetic Compass Liley Gillie, 1 Computerized Dynamic Positioning DP 2 (Kongsberg Simrad).

OIL RECOVERY

Capacity
Approx. 1020 cbm

LIQUID AND CARGO CAPACITY / DISCHARGE RATES

Fuel Oil
1620 cbm

Drill/Ballast water
1170 cbm

Fresh water
745 cbm

Brine
485 cbm combined with liquid mud tanks

Mud in comb tanks
730 cbm

Base oil
394 cbm combined in fuel tanks

ACCOMMODATION

Cabins
2 off suites with separate bedrooms and private toilet
5 off single cabins with private toilet
6 off double cabins with private toilet
4 off four beds cabins with private toilet
1 off hospital with two beds
Total persons: 35

Mess and recreation room, Galley, change room, Gym, Store rooms etc...
All accommodation fully air conditioned.

SEE PREVISIOUS SHIP

BACK TO THE FLEET

Harbour towage service

International trade shipping

People

THE GROUP

Rimorchiatori Riuniti s.p.a.
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Finarge Armamento Genovese s.r.l.
Rimorchiatori Salerno s.r.l.
Gesmar s.p.a
Finarge Apoio Maritimo l.t.d.a.
Tug Malta l.t.d.
Crystal Pool s.r.l.
Rimorchiatori Augusta s.p.a

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Rimorchiatori Riuniti

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Container Ships

GENERAL DETAILS

Call Sign
I C P S

Class
RINA:CTUG,SUPPORT VESSEL, FIRE-FIGHTING SHIP 2, OIL RECOVERY SHIP, U, AUT-UMS, Dynapos AM/AT R,MONSHAFT, INWATERSURVEY

Delivery
October 2010

Shipyard
Armon Shipyards – Spain

Flag
Italian – International Register

Deadweight
3.100 t at 6.85 m draft

Main engines
4 off Main Engines,
Type BERGEN
2 x 3000 kW + 2 x 4000 kW
Total power 14000kW (19.000 BHP)

Diesel Generators
Shaft Gen.: 2 x 2240 kW
Diesel Gen.: 3 x 470 kW
Em. Gen. 1 x 170 kW

Bollard pull
215 t continuous

TOWING/ANCHOR HANDLING WINCHES

One winch of Ulstein Brattvaag Waterfall type: BSL 400W/SL400W, consisting of:

Towing / Anchor handling
One declutchable drum:
Dimensions: 1400 mm dia x 3200 mm x 1200 + 4800 mm length
Wire capacity: 1100m+ 4000 m of 86 mm dia or 800m of 203mm dia fibre
With spooling device

Anchor Handling
One declutchable drum:
Dimensions: 1400 mm dia x 3200 mm x 1200 + 4800 mm length
Wire capacity: 1100m+ 4000 m of 86 mm dia or 800m of 203mm dia fibre
With spooling device

Speed 1st step
512 t Brake holding.
1. layer: 400 t at 0 – 12 m/min.
Mid. layer: 267 t at 0 – 18 m/min.
Top layer: 200 t at 0 – 24 m/min.

Speed 2nd step
1. layer: 246 t at 0 – 12 m/min.
Mid. layer: 164 t at 0 – 27 m/min.
Top layer: 122 t at 0 – 50.1 m/min.

Speed 3rd step
1. layer: 102 t at 0 – 37 m/min.
Mid. layer: 69 t at 0 – 55 m/min.
Top layer: 51 tonnes at 0 – 74 m/min.

Speed 1st step (all 3 drums)
420 tonnes stalling pull.
1. layer: 400 tonnes at 0 – 19 m/min.
Mid. layer: 243 tonnes at 0 – 26 m/min.
Top layer: 167 tonnes at 0 – 35 m/min.

Secondary Winch
2 off secondary winch, drum with two dividing flanges with cut out.
Dimensions: dia. 1500 mm / dia 4500mm, 4000 mm length. plus 750 mm length special compartment
Capacity main drum: 1400 m of rope dia. 203 mm.
1st layer: 140 t at 0 – 22 m/min.
Last layer: 57 t at 0 – 41 m/min.

190 t Dynamic Breaking at max. 60 m/min
170 t on band break

Spare/storage
1 rope reel winch 10.0 tonnes pull at 0-31m/min.
Capacity: min. 1500 m of 76 mm wire. One llocated below deck

Secondary Winch
2 off secondary winch 140 tonnes pull at 0-22 m/min.
One fixed drum with band brake, and dividing flange for special compartment.
Dimensions main drum: dia. 1500mm / dia 4500mm x 4600 mm lenght.1 x 900 special compartment @ side of the drum.
Capacity main drum: 1600 m of rope dia. 203 mm.
175t. Dynamic braking at max. 72 m/min
170t. On band brake.

DECK EQUIPMENT

Wildcats
n. 2 from 70 mm to 165 mm chain

Rig Chain-lockers
n. 4 tanks capacity total 488 cbm

Tugger
2 x 15 t

Pennant winder
1st layer 6.2 t at 0 29 m(min)

Capstan
2 x 15 t.

Forks
2 set hydraulic forks – SWL 650 t.

Towing pins
2 set hydraulic pins – SWL 330 t.

Quarter pins
2 set hydraulic "pop-up pins" – SWL 60 t.

Stern roller
double stern roller 6 x 3.5 m – SWL 550 t.

DRY BULK / DISCHARGING CAPACITY

Dry Bulk
n. 4 tanks

Capacity
220 cbm

Compressor
n. 2 x 25 cbm/min. at 80 psi

DECK AREA

Clear Deck area
600 sqm/ 41.0 x 14.6 m

Cargo capacity
1200 t

Deck strenght
10 t / sqm

Cargo rail
height of cargo 2 m

Deck crane
1 x 5 t at 18 m / 8.3 t at 9.3 m

Cargo rail cranes
2 x 3 t at 12 m

LIQUID AND CARGO CAPACITY / DISCHARGE RATES

Fuel oil
1112 cbm / 2 pc. 200 cbm/h – 9 bar

Drill/Ballast water
1209 cbm / 1 pc. 200 cbm/h – 9 bar

Fresh water
1140 cbm / 1 pc. 200 cbm/h – 9 bar

Brine
587 cbm (in liquid mud tanks) / 1 pc 78 cbm/h – 18 bar

Mud
587 cbm / 1 pc. 75 cbm/h – 24 bar

Base oil
181 cbm (in fuel oil tanks)

OIL RECOVERY

Monitors
approx. 1050 cbm

ACCOMODATION

Cabins
2 off suites with separate bedrooms and private toilet
10 off single cabins with private toilet
4 off double cabins with private toilet
4 off four beds cabins with private toilet
Total: 36 persons

Mess and recreation room, galley, change room, Gym, Store rooms etc...
All accommodation fully air conditioned (Double system).

FIRE FIGHTING EQUIPMENT

Monitors
3 off water monitors 2400 cbm/h each

Pumps

2 off Fire Fighting pumps (Kvaener Eureka)

SEE THE NEXT SHIP

BACK TO THE FLEET

Harbour towage service
Offshore service
International trade shipping
Ship management
Our fleet
People

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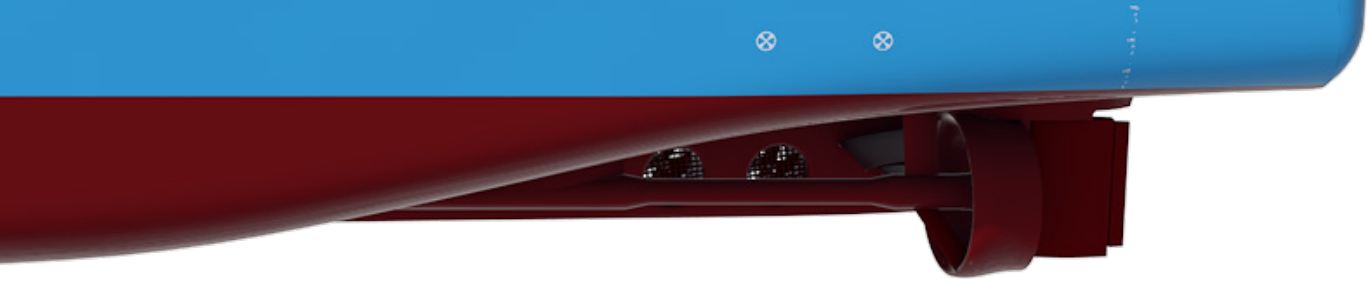
SALT 200 AHTS

Anchor Handling Tug Supply Vessel

salt
SHIP DESIGN



SALT 200 AHTS

Anchor Handling Tug Supply Vessel

FACTS

Ship owner: Maersk Supply Services
Shipyard: Kleven
Delivery: 2016 - 2017
No. of vessels: 6

MAIN CHARACTERISTICS

Length over all	95,00 m
Breadth moulded	25,00 m
Depth to 1st deck	11,00 m
Deadweight	4500 t
Max. speed	16 kts
Service speed	14 kts
Total Installed Power	17 665kW
CP propellers (Incl. PTI)	2 x 7340 kW
Tunnel thrusters, aft (FP)	2 x 1200 kW
Tunnel thrusters, forward (FP)	3 x 1200 kW
Environmental Regularity Number, ERN	99.99.99.99
Bollard pull	230 t

CAPACITIES (abt)

Deck area (open)	822 m^2
Deck area (total)	944 m^2
Working deck load	15/sqm aft - 10t/sqm forward
Deck load capacity, VCG 1m above deck	2500 t
ROV hangar/ LARS side launch	1 x WROV
Accommodation, ILO MLC 2006/ SPS 2008	52 persons
Fuel oil capacity (Dedicated tanks)	1050 m^3
Pot water	1000 m^3
Chain lockers	1200 m^3
Dry bulk	310 m^3
Base oil / Brine	920 m^3
Liquid mud	620 m^3
AHT drum	1 x 450t
Towing drum	2 x 500t
Secondary winches	2 x 170t

CLASS NOTATIONS

✠100A1,✠LMC, Offshore Supply Ship, AHTS, Oil Recovery, Fire Fighting, Ship 1(2400), Ice Class 1AFS, RD (2,8), UMS, DP(AA), *IWS, Eco (BWT, GW, OW, P)

salt SHIP DESIGN

CONTACT
Stord, Norway
Phone: +47 55 62 93 40
E-Mail: sales@saltship.com
Address: Post box 13 - 5401 Stord, Norway

www.saltship.com

VM LEADER

DP II AHTS/ 7200 BHP

DIMENSION	**60.80m (L); 16m (B)**
BHP / BP	**7200 BHP / 90 T**
DECK AREA	**450 m2**
AH/TOWING WINCH	**150T Pull**
CLASS	**BV**

VM LEADER IS DP II AHTS, FIFI 1 AHTS WITH 32 ACCOMMODATION

AHTS SUPERIOR

DPII AHTS / 5520 BHP

DIMENSION	66.m (L); 16.m (B)
BHP / BP	5520 BHP / 65 T
DECK AREA	450 m2
AH/TOWING WINCH	150T Pull
CLASS	ABS

SUPERIOR IS DP II AHTS, FIFI1 WITH OIL RECOVERY, SPS COMPLIANT, WITH 50 ACCOMMODATION

WÄRTSILÄ **Ship Design**

VS 4612 AHTS

ENERGY
ENVIRONMENT
ECONOMY

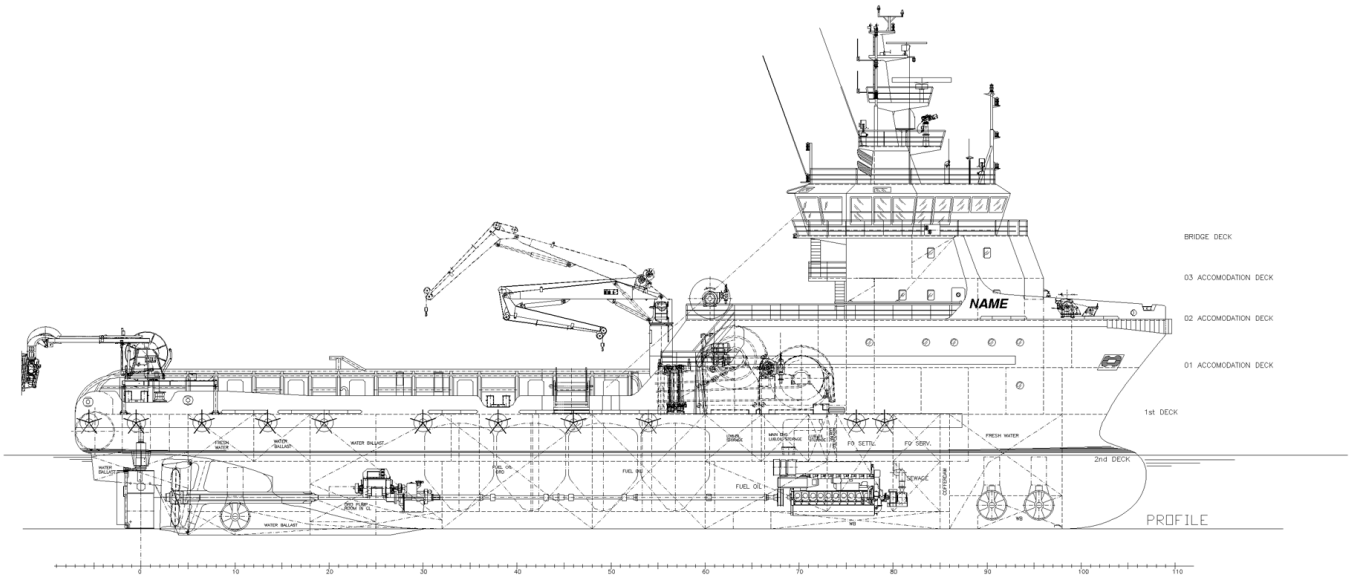
MAIN DATA

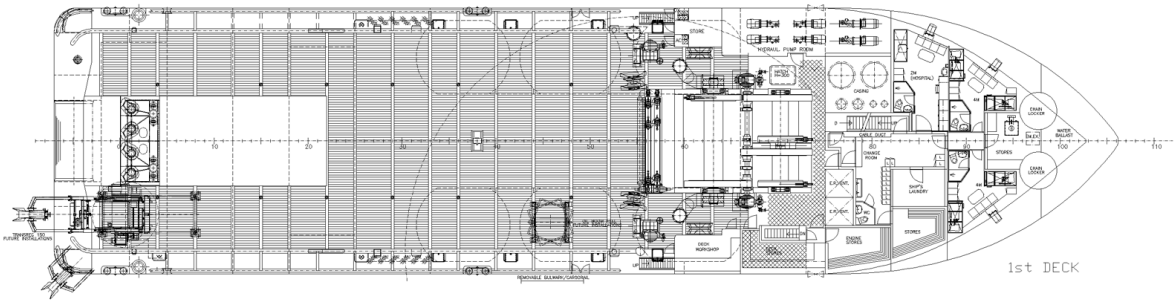
Length over all: 69.60m
Deck Area:.....483 m²
Bollard Pull:.....150 T
Speed:.....15.8 knots

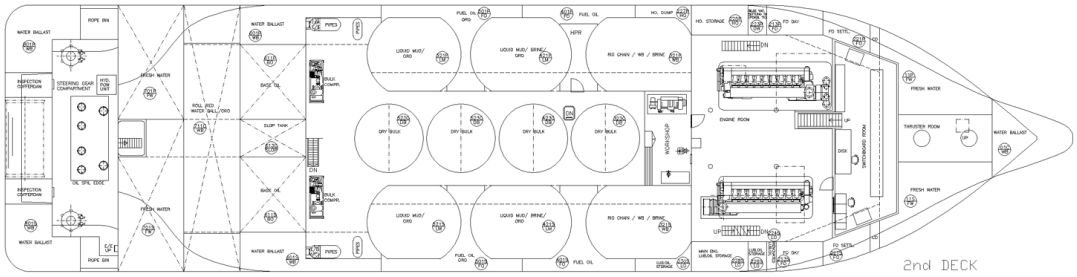
ANCHOR HANDLING TUG SUPPLY VESSEL
TOISA DEFIANT

- Anchor Handling
- Towing
- Supply
- Dynamic Positioning DP 1
- Fire Fighting I
- Oil Recovery

WÄRTSILÄ







MAIN DIMENSIONS

Length over all:	69.60 m
Breadth moulded:	17.00 m
Depth moulded:	7.30 m
Deck Area:	483 m^2
Draught	6.20 m

CAPACITIES

Deadweight:	2298 tonnes
Cargo Fuel Oil:	825 m^3
Drill water:	1079 m^3
Portable Water:	473 m^3
Dry Bulk:	4 x 57 m^3
Liquid Mud:	568 m^3
Brine:	622 m^3
Base Oil:	120 m^3
Rig Chain Lockers:	305 m^3

CLASS

DnV+1A1 Tug Supply Vessel Fire Fighter I
OILREC SF E0 DYNPOS-AUT DK(+) HL(2.8)
TMON

DECK EQUIPMENT

Main Winches:	350 T
Stern Roller:	5m x 2.5m Dia. 500 T SLW
Anchor handling tongs:	
Karm Forks:	2 x 450 T SWL retractable
Towing Pins:	4 x 300 T SWL retractable
Pop Up Pins:	2 x 95 T SWL retractable
Deck Crane:	
Duties on boom hook:	5 T SLW
Offshore on winch hook:	2 T SLW
Tugger winches:	2 x 15 T
Capstans:	2 x 10 T

MACHINERY AND PROPULSION

Main Engines:	2 x 9L32B2, 4500 kW
Shaft Alternator:	1440 kW
Tunnel Thrusters:	3 x 610 kW

PERFORMANCE

Trial Speed:	15.8 knots
Service Speed:	10-13 knots
Bollard Pull:	150 T

ACCOMMODATION

The vessel is built with a compliment for totally 24 persons.

REFERENCE

Shipyard:	Wuchang Shipyard
Shipowner:	Sealion
Design ID:	VS 4612 ATHS
Reference Number:	3175
E-mail for info:	shipdesign@wartsila.com

Details are believed to be correct but not guaranteed

WÄRTSILÄ

WARTSILA.COM

AUGUSTA OFFSHORE

PSV
ASSO TRENTA

Year	2009
Flag	Italian
Builder	Simek AS - Norway
Design	UT 755LC
Class society	RINA
Class notation	+Hull, +Mach; supply vessel; chemical product; oil recovery ship; fire-fighting ship-1; water spraying; unrestricted navigation; AUT-UMS; DP1; inwatersurvey; mon-shaft
IMO number	9429467

PSV Asso Trenta - technical data

GENERAL INFO

Year	2009
Flag	Italian
Builder	Simek AS - Norway
Design	UT 755LC
Class society	RINA
Class notation	
+Hull, +Mach; supply vessel; chemical product; oil recovery ship; fire-fighting ship-1; water spraying; unrestricted navigation; AUT-UMS; DP1; inwatersurvey; mon-shaft	
IMO number	9429467

MAIN PARTICULARS

Length OA	76,60	mt
DWT	3.200	T
Length BPP	68,20	mt
Breadth moulded	16,00	mt
Depth moulded	7,00	mt
Gross tonnage	2.415	T
Net tonnage	1.062	T
Maximum draft	5,83	mt

CARGO CAPACITIES

Working Clear Deck - space	690	sqm
Working Clear Deck - length x breadth	51mt x 13,50mt	
Max Deck Cargo	1.600	T
Deck loading	5 T/sqm	
Fuel Oil	973	cbm
Fresh Water	885	cbm
Brine	multipurpose - 397	cbm
Mud	multipurpose - 993	cbm
Base Oil	202	cbm
Dry Bulk	328	cbm
Number of Dry Bulk tanks	5	

MACHINERY/PROPULSION

Main Engines	2 x WARTSILA 8L26 - 3.550 BHP each
Drive type (Direct/Diesel Electric)	Direct
Total power (BHP)	7.100
Rudders	2 x Ulstein High Lift spade
Bow thruster(s) (number and BHP)	2 x tunnel Kamewa - Ulstein TT 1850 - 590 kW
Stern thruster(s) (number and BHP)	1 x tunnel Kamewa - Ulstein TT 1650 - 590 kW
Shaft generator	2 x 1.800 kVA at 1.800 rpm
Diesel generator	2 x Volvo Penta 250 kW
Emergency generator	1 x Volvo Penta 170 kW
Fuel type - (MGO / IFO / HFO)	MGO

CARGO DISCHARGE CAPACITY

Fuel Oil	200 cbm/hr - 9 bar
Fresh Water	200 cbm/hr - 9 bar
Drill Water	200 cbm/hr - 9 bar
Brine	75 cbm/hr - 18 bar
Mud	2 x 75 cbm/hr - 18 bar
Base Oil	90 cbm/hr - 9 bar

SPEED/CONSUMPTION

Max Speed/Consumption	14,5 knots per 22 t/day
Economical Speed/Consumption	10 knots per 8 t/day
Port Consumption	0,5 t/day

ACCOMODATION

Crew	18
Passengers	3 x 4 bed cabins

FI-FI

FiFi	FiFi1	
Number of monitors	2 x 1.200 cbm/hr	
Number of pumps	2 x 1.600 cbm/hr - 14 bar	
Foamite	20	cbm

ANTI POLLUTION EQUIPMENT

Dispersant	10	cbm
Spray booms	2	
Oil Recovery capacity	not dedicated - 794	cbm

RESCUE EQUIPMENT

Rescue Boat	1 x 6persons - Viking 470 GRP 1
Inflatable life rafts	4 - 140 persons in total
Life jackets	35

NAVIGATION AND COMMUNICATION EQUIPMENT

Joystick (Yes / No)	Yes
DP	Class1
DP type	Kongsberg K-POS-DP-11
Radar (number and type)	2 x Furuno - X band - S band
GMDSS	A1+A2+A3
Inmarsat	2 x Furuno Felcom 15 + 1 JRC JUE 500
VHF	
3 x Jotron TronTR20 + 2 x VHF/DSC Furuno FM2721 + 2 x VHF/DSC Furuno FM8800	
DGPS/GPS	
2 x DGPS Kongsberg Seatex DPS 200 and DPS 132 + GPS Furuno GP-150	
Echo sounder	Furuno FE-700
Speed log	Furuno Doppler DS-800
Radio Telex	Furuno NX-700B
Gyroscopic compass	2 x Raytheon STD22
Automation	Raytheon Pilotstar D

GULFMARK

HIGHLAND CHIEFTAIN

MMC879 CD PSV DP 2, DIESEL ELECTRIC, PLATFORM SUPPLY VESSEL

REGISTRATION

Owner	GulfMark UK Ltd
Year Built	2013
Builder	Remontowa, Poland
Flag	UK
Classification	ABS +A1 (E) OFFSHORE SUPPORT VESSEL, +AMS, +ACCU, +DPS-2, OIL RECOVERY CAPABILITY CLASS 2, FIRE FIGHTING VESSEL CLASS 1, UWILD, GP, ENVIRO, SPS

MAIN CHARACTERISTICS

Length Overall	261 ft	(79.45 m)
Breadth (moulded)	55 ft	(16.80 m)
Depth (moulded)	24 ft	(7.40 m)
Draught (max)	20 ft	(6.00 m)
GT	3,260	
NT	1,381	

CAPACITIES

Deadweight	4000 T
Cargo Deck Area	193 ft x 47 ft = 9,106 ft^2 (58.78 x 14.4 m = 846m^2)
Deck Load	2000 T
Fuel Oil Cargo	259,681 gal (983 m^3)
Potable Water	258,888 gal (980 m^3)
Drill Water	424,260 gal (1606 m^3)
Oil Based Mud	7308 bbls
Base Oil	2016 bbls
Brine	3276 bbls
Methanol / Xylene	51,249 gal (194 m^3)
Dry Bulk	10,610 ft^3 in 5 tanks

CARGO DISCHARGE

Fuel Oil	150 m^3/hr @ 90 m hd
Pot Water	150 m^3/hr @ 90 m hd
Oil Based Mud	4 x 75 m^3/hr @ 14bar
Base Oil	100 m^3/hr @ 90 m hd
Brine	4 x 75 m^3/hr @ 14bar
Cement	80 T/hr @ 90 m hd
Barytes	60 T/hr @ 90 m hd
Bentonite	100 T/hr @ 90 m hd
Methanol	2 x 75 m^3/hr @ 90 m hd
Drill Water	150 m^3/hr @ 90 m hd

PERFORMANCE

11 knots	@ Approx.11 T / day
14.5 knots	@ Approx. 20 T / day
DP	@ Approx. 5-10 T / day

DYNAMIC POSITIONING SYSTEM (CLASS II)

L3 Platinum DP System	
References	1 x Radascan
	3 x DGPS receiver

MACHINERY

Diesel Electric Generating Power	9,598 BHP
Propulsive BHP	5,362 BHP
Main Generators	4 x CAT 1790 KW
Emergency Gen	1 x CAT 350 KW
Thrusters Bow	2 x 1200 BHP(TnI)
Thrusters Stern	N/A – D.E. (Azimuth)
Rudders	N/A – D.E. (Azimuth)
Propellers	2 x FPP Azimuth
Capstans	2 x 8T
Deck Crane	2 x 3T @ 10m
Tugger Winch	2 x 10T

MANOEUVRING EQUIPMENT

2 x Rotating variable speed Stern Azimuth propulsion units (Diesel electric)

TANK WASHING SYSTEM

Fixed tank washing system in all mud tanks
Hot / Cold wash with / without chemicals

NAVIGATION AND COMMUNICATION

1 x L3 Radarpilot 10CM ARPA RADAR
1 x L3 Radarpilot 3CM ARPA RADAR
3 x C-Nav 100G DGPS inbuilt Navigator
3 x Sailor SP3520 GMDSS VHFs
4 x Motorola GP 340 portable UHF exrated
1 x GSM/GPRS Cellular phone
3 x TSS Meridian Gyro Compasses
1 x L3 Trackpilot autopilot
1 x L3 ECDISpilot
1 x Caproc Sat Communication system
1 x SAM 4620 echo sounder
1 x SAM 4682 Doppler speed log
1 x SAM 3410 AIS system
1 x SAM RT6310 MF/HF SSB radio station
1 x SAM DSC terminal
2 x SAM 6110E Inmarsat C
1 x Sailor FBB150 Fleetbroadband Satellite
1 x SAM 2918 Navtex receiver
2 x Debeg RT622 VHF - built in DSC
1 x Debeg RT6210 simplex VHF
1 x SAM 6110 SSAS
1 x SAM LRIT software

ENVIRONMENTAL

ABS 'ENVIRO' Class notation
Double Hull with no hydrocarbon products on outer shell.
Green Passport

ACCOMMODATION

26 persons	8 x 1 Man cabins
	9 x 2 Man cabins

DNV UKAS QUALITY MANAGEMENT 013

DNV UKAS ENVIRONMENTAL MANAGEMENT 013

GULFMARK

HIGHLAND CHIEFTAIN

MMC879 CD PSV DP 2, DIESEL ELECTRIC, PLATFORM SUPPLY VESSEL

TANK CAPACITIES

	CUBIC METRES				BARRELS		
TANK	**FUEL OIL**	**FRESH WATER**	**METHANOL**	**DRILL WATER**	**OIL BASED MUD**	**BRINE**	**BASE OIL**
CARGO FUEL (14)	138.8 84.2 109.9 155.8 168.0 110.3 45.9 35.7 52.9 2 x 14.8 2 x 29.7 25.9						
FRESH WATER (7+1)		2 x 160.3 64.5 65.5 94.7 157.8 158.5 118.5					
METHANOL (2)			2 x 97				
DRILL WATER (16+1)				2 x 46.2 2 x 130.7 2 x 136.8 132.3 137.0 115.3 111.3 116.2 71.4 83.4 16.0 18.6 58.3 118.5			
OBM (8)					6 x 1008 2 x 630		
BRINE (4)						2 x 1008 2 x 630	
BASE OIL (2)							2 x 1008
TOTAL	**983**	**980**	**194**	**1606**	**7308**	**3276**	**2016**

Dark Blue denotes primary function, **Light Blue** denotes secondary / tertiary function

These particulars should be taken as indicative and do not constitute a warranty

GULFMARK

HIGHLAND LAIRD

UT755L – 7,482 BHP DP2 ROV SUPPORT & PLATFORM SUPPLY VESSEL (PSV)

REGISTRATION

Owner	GulfMark UK Ltd
Built	2006
Builder	Rosetti Marino SpA, Italy
Classification	DNV +1A1 Supply Vessel, FiFi 1, OILREC, EO, TMON, DYNPOS AUTR NV
Flag	UK

MAIN CHARACTERISTICS

LOA	72 m
Breadth (moulded)	16.00 m
Draught (max)	5.85 m
GT	2,305
NT	848T
Deadweight	3,184T

FUEL CONSUMPTIONS

c. 14.5kn @ c. 25.0t / 24hrs
c. 13.0kn @ c. 15.9t / 24hrs
c. 11.0kn @ c. 12.3t / 24hrs
c. 9.0kn @ c. 9.8t / 24hrs

MANOEUVRING EQUIPMENT

1 x Poscon Joystick (portable)

MACHINERY

Main Engines	2 x 3,741 BHP
Thrusters Bow	2 x 885 BHP
Thrusters Stern	2 x 800 BHP
Shaft Altenators	2 x 1800 kW
Aux Generators	2 x 375 kVA + 1 x 150 kVA
Rudders	2 Rolls Royce High Lift
Propellers	2 x CPP
Deck Crane	1 x 3T @ 16m
Tugger Winch	2 x 10T
Capstans	2 x 8T

DYNAMIC POSITIONING SYSTEM (CLASS II)

Konsberg – Simrad SDP-21 Green DPS (DP II)
References:
1 x HiPAP 500 Acoustic Positioning System
1 x Fanbeam MK4 laser system
1 x DGPS DPS-200 with IALA receiver
1 x DGPS DPS-100

ACCOMMODATION

5 x 1 Man
22 x 2 Man
Max. 26 berths available for charterers personnel during DP operations

FIRE FIGHTING

FiFi 1 with Self Drenching System
2 x 1800 m^3/hr pumps
2 x 1200 m^3/hr monitors (water/foam)

NAVIGATION EQUIPMENT

1 x Sperry Bridgemaster 10cm ARPA Radar
1 x Sperry Bridgemaster 3cm Radar
1 x Leica GPS Satellite Navigator
3 x Sperry Navigat Gyro Compass
1 x Sperry Navipilot Autopilot
1 x Sailor AIS
1 x Sperry Echosounder
1 x Sperry Naviknot Speed Log
1 x JRC Weather Fax

COMMUNICATION EQUIPMENT

1 x Inmarsat F / 2 x Inmarsat C
1 x Internal Intercom System
Radio plant according to GMDSS requirements
4 x Motorola GP 340 Atex
3 x VHF's (Bridge)
2 x Sailor VHF RT 4722
1 x Sailor VHF C 4900
External communication according to GMDSS – 3 x Sailor SP 3300
1 x Sailor 406 MHz EPIRB

CARGO CAPACITY

Deck Area	640 m^2 (47m x 13.6m)	
Deck Load	1,550T	
Fuel Oil	931 m^3	@ 100%
Potable Water	800 m^3	@ 100%
Drill Water	1,255 m^3	@ 100%
Oil Based Mud*	6,304 bbls	@ 100%
Base Oil	1,258 bbls	@ 100%
Brine*	6,304 bbls	@ 100%
Oil Recovery	800 m^3 (8 tanks)	
Dry Bulk	11,300 cuft @ 100% (80psi)	

*Mud/Brine tanks (S.G. 2.5) 10 dual purpose mud / brine tanks.
Can be split 6/4; mud /brine with total segregation.

AGITATORS

Electric agitators in all mud/brine tanks.

TANK WASHING SYSTEM

Toftejorg fixed tank cleaning system in mud/brine tanks. Hot water and chemical dosing applications.

DISCHARGE RATES

Fuel	250 m^3/hr	@ 90m hd
Pot Water	200 m^3/hr	@ 90m hd
Oil Based Mud	2 x 70 m^3/hr	@ 90m hd
Base Oil	90 m^3/hr	@ 90m hd
Brine	75 m^3/hr	@ 90m hd
Cement	80T /hr	@ 90m hd
Barytes	60T /hr	@ 90m hd
Bentonite	100T /hr	@ 90m hd
Drill Water	150 m^3/hr	@ 90m hd

ADDITIONAL FEATURES

Removable Wheelhouse for transiting low air draft areas

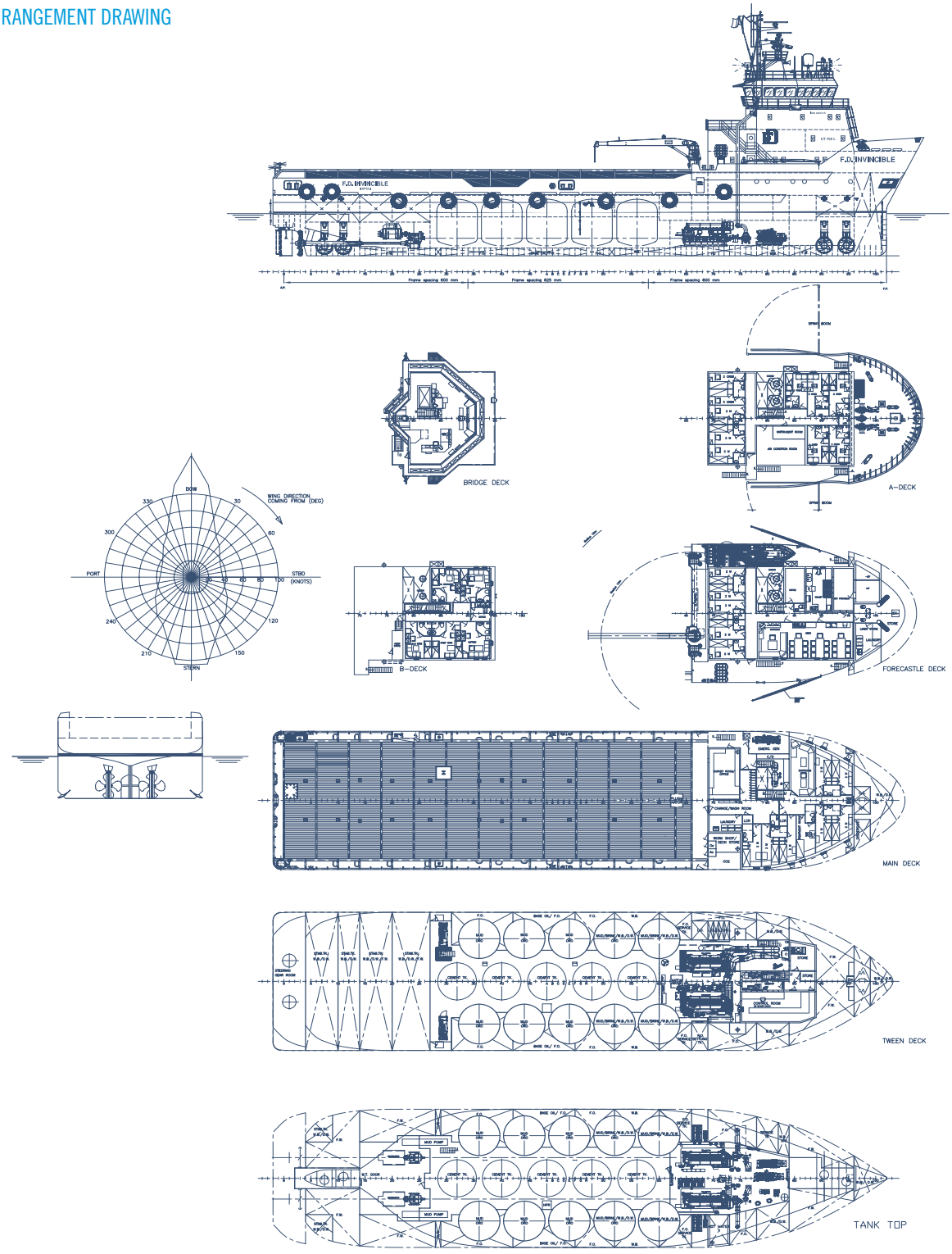
Minimum air draft	14.4m
Deck Power Outlets	2 x 500Amp Outlets (440v)
Reefer sockets	12 x 110v / 32Amp
Mob Boat	Norsafe Midget 5.0
Dispersant Spraying	2 x 10m stainless steel booms
Dispersant Storage	9.8 m^3
Oil Recovery equipment	800 m^3 @ 450 m^3/hr discharge Power pack for oil rec.

GULFMARK

HIGHLAND LAIRD

UT755L – 7,482 BHP DP2 ROV SUPPORT & PLATFORM SUPPLY VESSEL (PSV)

GENERAL ARRANGEMENT DRAWING



GULFMARK

HIGHLAND LAIRD

UT755L – 7,482 BHP DP2 ROV SUPPORT & PLATFORM SUPPLY VESSEL (PSV)

TANK CAPACITIES

	CUBIC METRES				BARRELS		
TANK	**FUEL OIL**	**FRESH WATER**	**DRILL WATER**	**DP MUD/BRINE**	**OIL BASED MUD**	**BRINE**	**BASE OIL**
FUEL (11 + 2)	105.3 119.9 65.9 (x 2) 99.9 102.1 134.2 (x2) 41.7 (x 2) 16.2						628.4 642.2
FRESH WATER (6 + 2)		113.7 104.3 58.7 33.4 (x 2) 79.2 173.1 189.9	173.1 189.9				
DRILL WATER (11)			69.5 50.7 97.7 (x 2) 100.7 (x 2) 112.4 166.5 96.2				
DUAL PURPOSE MUD/ BRINE (6 + 4)*				634 634 634 634 634 634 614.5 614.5 635.3 635.3			
OBM (6)					634 634 634 634 634 634		
BRINE (4)						614.5 614.5 635.3 635.3	
BASE OIL (2)							628.4 642.2
TOTAL	**927**	**786**	**1,255**	**6,304**	**3,804**	**2,499.6**	**1,270**

***The 10 Dual Purpose Mud / Brine Tanks can be: All 10 Mud or All 10 Brine or split 6 Mud / 4 Brine (with complete segregation)**

ST-216

85.8m x 19.2 Platform Supply Vessel

MAIN CHARACTERISTICS

LENGTH O.A.:	85.8
BEAM:	19.2
DEPTH:	8.0
SPEED:	16.5
DEADWEIGHT:	at max draft abt. 4400 t
ACCOMMODATION:	23 pers

DECK AREA:	900 m2
FEATURES:	Voith Schneider propulsion
:	Integrated drill cutting tanks
:	High LFL* capacity
:	RIM tunnel thruster

SKIPSTEKNISK AS
Klaus Nilsens gt. 4, P.O.Box 36 Sentrum, NO-6001 Aalesund, Norway
PHONE: +47 70 10 33 44 FAX: +47 70 10 33 48 E-MAIL: office@skipsteknisk.no WEB: www.skipsteknisk.no

Skipsteknisk™

Edda Fram is the first vessel with integrated tanks below deck for carrying large volumes of drill cuttings

Long relationship puts PSV at the forefront

The design of Østensjø's innovative *Edda Fram* draws on experience gained by shipowner and charterer over many years of co-operation; highlights include its drill cuttings system and the first use of Voith Schneider Propellers on a PSV

Due to enter service with Østensjø Rederi shortly, *Edda Fram* will replace *Edda Sprite* (also formerly called *Edda Fram*) on a long-term contract with Shell UK Ltd. The name *Edda Fram* is a special one for Østensjø Rederi: the company's founder, Johannes Østensjø, gave it to a PSV built in Durban, South Africa, in 1976, which marked the start of the company.

Østensjø has had a long association with Shell, one that dates back to the late 1980s, the second *Edda Fram* having first been chartered by the oil major in 1981. Vessels bearing the name *Edda Fram* in the past have also been innovative in their own right, one being the first with high bulwarks to provide a safer environment for the crew, and with windows on the roof of the bridge, which enabled the master to see cargo being received from offshore installations. Another 'first' was a supply vessel with a DP system.

Over the years, Østensjø has listened carefully to Shell's evolving requirements, and responded to the company's needs – specifically regarding safety improvements and enhancements, so it perhaps no surprise that the company is now chartering another innovative ship in the form of the new *Edda Fram*.

Shell UK's PSV contract holder, Colin Stratton, said of the decision to use the vessel: "Østensjø Rederi has always come up with innovative ideas, and the new *Edda Fram* foots the bill perfectly. Østensjø had been in discussions with Shell UK since 2000 on methods of transporting drill cuttings in bulk, and this concept has now come to fruition in this newest ship.

"Shell is also keen to be part of a revolution with the Voith Schneider propulsion system, which has been a proven success on tugs, but which is being fitted on a PSV for the first time. This propulsion concept, as well as providing manoeuvrability, will also reduce fuel consumption and emissions, both of which are beneficial, economically and environmentally."

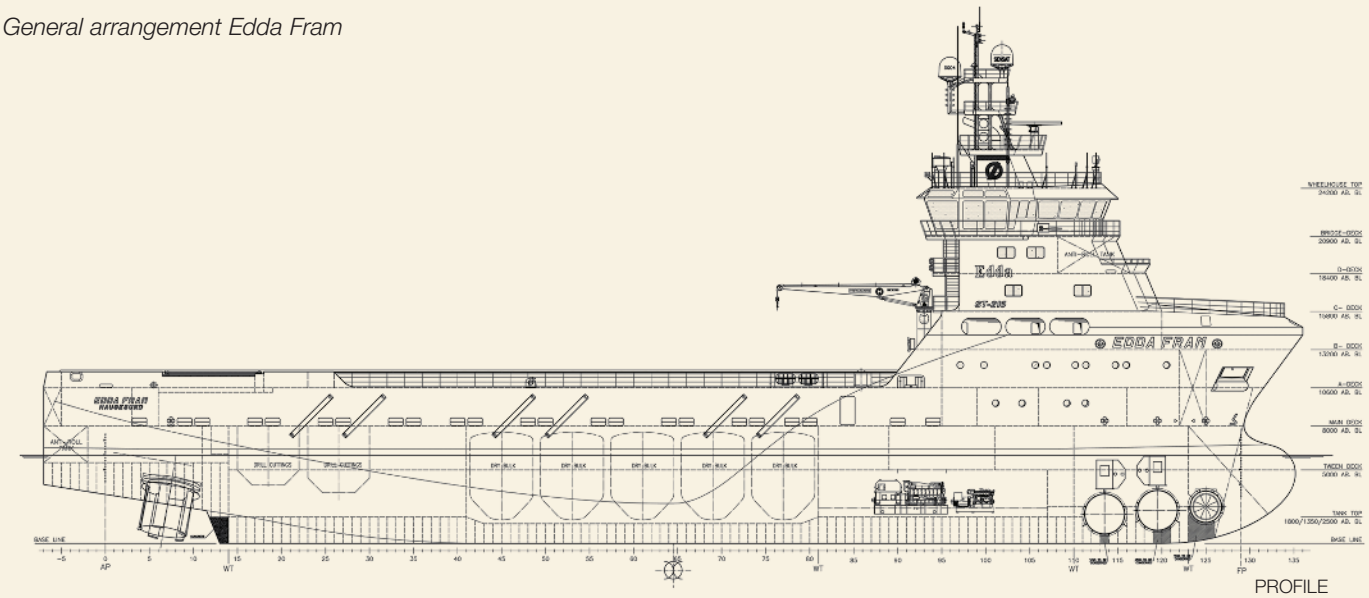
Asked if Shell UK might need more vessels built to the same specification (a sister to *Edda Fram* is already under construction at Astilleros Gondan in Spain, and is due for delivery in March 2009), Mr Stratton said the answer had to be 'yes,' noting that, today, 60 per cent of the Shell chartered fleet is less than five years old. "The success of the new *Edda Fram* will lead to these innovations becoming the industry norm," he forecast.

Østensjø Rederi developed the concept for the advanced new PSV design together with design

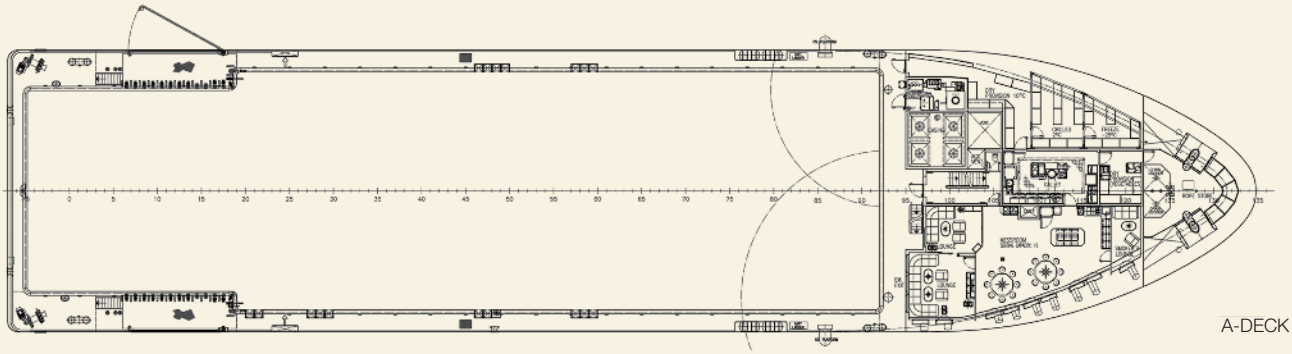
ST216 EDDA FRAM

Owner	Østensjø Rederi
Designer	Skipsteknisk
Builder	Astilleros Gondan
Length, oa	85.80m
Length, bp	77.40m
Beam	19.20m
Depth to main deck	8.00m
Depth to A-deck	10.60m
Draft max	6.50m
Deadweight	4,200 tonnes
Deck cargo	2,500 tonnes
Deck area	915m^2
Diesel oil	1,212m^3
Potable water	825-1,252m^3
Water ballast/drill water	1,107m^3
Mud/brine	951m^3
Methanol (in stainless steel tanks)	163m^3
Special products/drill cuttings	427m^3
Dry bulk tanks	353m^3
Recovered oil capacity (ORO)	1,036m^3
Class	DNV +1A1, Supply Vessel, SF, E0, DYNPOS-AUTR, HL(2,8), dk+, LFL*, ICE-C, CLEAN, COMF – C(3)-V(3), NAUT OSV 3

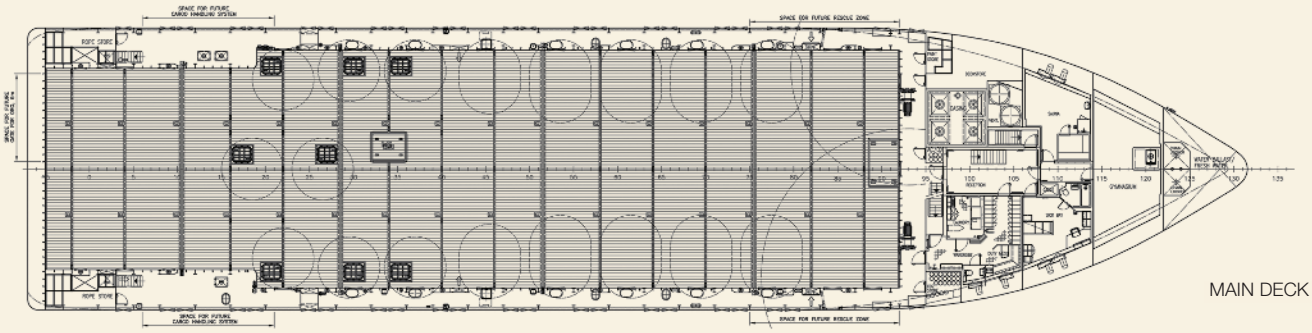
General arrangement Edda Fram



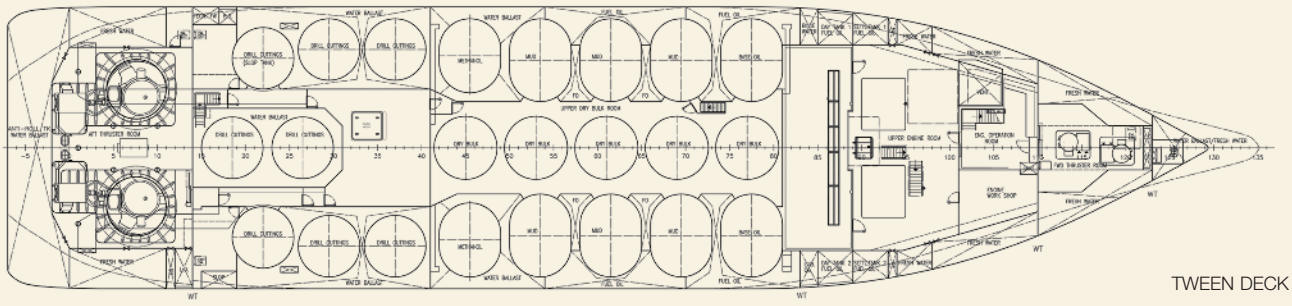
PROFILE



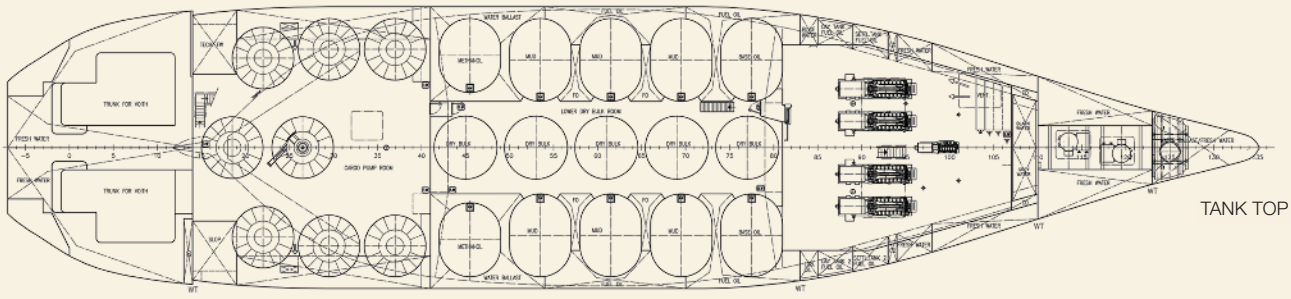
A-DECK



MAIN DECK



TWEEN DECK



TANK TOP

consultancy and naval architectural concern Skipsteknisk. The design carries forward the successful concept of high bulwarks and multi-access safe havens, which first was introduced to the market in early 1980 with the company's series of SK60/09 type vessels; however, the new design, the ST216, has diesel-electric propulsion and will benefit from a specially-developed low resistance hullform. This has been extensively model tested at Marintek in Trondheim, Norway, and at the Vienna Model Basin in Austria.

The Voith Schneider cycloidal propellers (VSPs) are a concept developed by Voith Turbo Marine. This plant is expected to have a number of operational benefits.

In the VSP, a rotor casing which ends flush with the ship's bottom is fitted with a number of axially parallel blades and rotates about a vertical axis. To generate thrust, each of the propeller blades performs an oscillating motion about its own axis. This is superimposed on the uniform rotary motion. Blade excursion determines the amount of thrust, while the phase angle of between 0 and 360 degrees determines its direction. As a result, the same amount of thrust can be generated in any direction. Both variables – the magnitude and the direction of thrust – are controlled by a technique known as mechanical kinematic transmission.

The new delivery will be the first anywhere with integrated tanks below deck for transporting large volumes of drill cuttings. *Edda Fram* is fitted with eight fully integrated special purpose tanks which can be utilised for a variety of different cargoes. The cargo systems are remotely operated through an integrated automation system and are designed for high efficiency and flexibility.

For some time, Ostensjø Rederi has been working with key manufacturers such as PG Marine on the development of technology that could radically improve on the safety, capacity and costs involved transporting and handling drill cuttings. This project was initiated as a co-operative one between Shell UK and the company.

Edda Fram's eight circular tanks are arranged and connected to different systems with chemical type separation flanges. These tanks can be used for a variety of cargoes and slops, including low flashpoint liquids. Tank suctions and pumps are placed underneath the tanks, allowing for best possible suction and draining.

Østensjø Rederi says it believes that the diesel-electric power and propulsion arrangement with Voith Schneider propulsion will ensure a high level of redundancy and safety, and particularly low fuel oil consumption – especially during manoeuvring and operation at offshore installations. VSPs offer potential fuel savings compared with alternatives such as contra-rotating azimuth thrusters (see box).

The principal elements comprise four

Østensjø Rederi developed the concept for the advanced new PSV design together with design consultancy and naval architectural concern Skipsteknisk

Edda Fram can carry a variety of cargoes and slops, including low flashpoint liquids

1,950kW main diesel generators, an auxiliary/harbour generator of approximately 400kW, two 2,500kW VSPs aft as the main propulsors, and two 1,400kW tunnel thrusters forward.

Edda Fram also employs a 690V diesel-electric system based on the newly-developed Wärtsilä Low Loss Concept (LLC). The LLC concept will, notes the shipowner, provide for increased power and thruster availability in case of any failure on the switchboards, especially in DP mode.

In the case of a short-circuit on one switchboard, available power will only be reduced by 14.6-33 per cent, and available thruster capacity by 25 per cent (in a conventional system, with a split switchboard, a reduction of 50 per cent of both available power and thruster capacity would occur in the same circumstances).

Østensjø has worked closely with Voith Turbo Marine over the years, optimising the performance of the German company's VSP thrusters, particularly with regard to their use on escort tugs, but also, more recently, on offshore vessels. Lately, this work has also focused on using VSPs for active roll reduction, a function which, as the company points out, is particularly attractive for offshore ships. The VSPs, which have a particularly fast response time, allow thruster forces to be used to counteract actively rolling movements by up to 90 per cent, depending on circumstances (see box).

The ST216's hull lines have been optimised, with an operational speed of 15-16 knots in mind, and the slender form of the hull has been extended all the way up to the forecastle deck, in order to achieve high speeds for all loading

conditions and sea states. The design also has a relatively small block coefficient to obtain the operational speed required whilst at the same time providing low fuel consumption in all operating conditions.

In keeping with its operating philosophy, and that of its customer Shell, Østensjø Rederi also sought an environment-friendly design. The new vessel was constructed in compliance with DNV's Clean class notation, and has a number of features designed to further enhance the ship's 'green' credentials.

The ship will comply with noise and vibration requirements in accordance with DNV's Comfort class notation. In order to meet the necessary noise level with all thrusters running, the diesel generators are elastically mounted, as are the tunnel thrusters forward; and floating floors and elastic mountings support the accommodation.

Last but by no means least, crew comfort is emphasised by the company – and considered to be of major importance for the safety and quality of operation. In addition to elastic machinery mountings, *Edda Fram* has high quality accommodation featuring single cabins with TV and entertainment equipment, satellite TV, a spacious lounge and messroom, a separate lounge for smokers, a gymnasium/ recreation room with sauna and a range of office facilities. *OSJ*

VSPs: assessing the benefits

Voith claims a PSV such as Edda Fram which is driven by two VSPs needs 10-20 per cent less power, depending on the load conditions and the sailing speed. This saves fuel costs and increases the service life of the vessel.

As Voith's naval architect Ingo Beu explained, initial model test series were carried out at Marintek in Trondheim, Norway, in 2002 in which the power uptake of the two types of propulsor – a contra-rotating propeller (CRP) and a VSP – were established.

The tests demonstrated that the PSV fitted with VSPs needed approximately 10 per cent less power at various hull drafts and across the entire speed range, and a second series of model test series at SVA in Vienna in February 2005 confirmed the earlier results.

"The VSP ship requires less brake power, and the ship has a higher overall level of efficiency," Mr Beu said. "This means that the propulsion performance of the ship is better and fuel consumption is lower."

With the VSP, says Voith, a fuel saving of 10 per cent is obtained in free running mode at 14 knots; a fuel saving of 20 per cent is obtained at 10 knots; and a fuel saving of 15 per cent is obtained at 3-35 knots; with a fuel saving of about 10 per cent in DP mode.

The VSP is proven on smaller vessels but Edda Fram is its first use on a PSV

Voith says there are also a number of other advantages to be gained by using VSPs – these include, as mentioned above, reduced powering; plus roll stabilisation at standstill and during sailing; fast and accurate steering; long service life; low maintenance costs; high availability; and high reliability. Other advantages include a much faster response time, no swiveling thrust vectors, and further power savings as a result of faster and more precise thrust control.

Propulsors can be used to reduce roll

Different types of propulsor can provide different types of advantages, such as enhanced propulsive efficiency, higher speeds, reduced fuel consumption, enhanced manoeuvrability or a combination of these. Voith Turbo Marine believes studies it has carried out suggest that VSPs could have an important role to play in roll stabilisation on board a wide range of vessels, particularly those that need to operate at low speed or remain stationary.

VSPs are, of course, not yet widely used on mainstream merchant ships or in the support vessel market, but their popularity is increasing. Voith believes that they can provide an efficient, cost-effective main propulsor, *and* play a key role in suppressing rotational movement about a ship's longitudinal axis.

Ingo Beu, a naval architect at Voith Turbo Marine, said that conventional roll stabilisation techniques are usually divided in two broad types, these being 'active' operation and 'passive' operation. The key to successful roll stabilisation is to produce a moment opposing the moment causing the rolling motion. Active operation produces a counteracting moment by means of actively controlled machines, with a sensor used to detect the rolling motion, and a regulator that controls the counteracting moment as required.

VSPs can generate propulsion and steering forces and be used to reduce roll

Examples of active roll stabilisation techniques include fin stabilisers (retractable or fixed), and active roll stabilisation tanks. The advantage of such systems is that they have good damping properties. Disadvantages include their complexity and expense; the fact that they are heavy (particularly the liquid used to fill roll stabilising tanks); they take up a lot of space on board; and they require a high level of maintenance. Other potential disadvantages include the fact that fin stabilisers only work at design speed, they have a high level of resistance (even when retracted), and they increase the draft of a vessel to which they are fitted.

Passive roll stabilisation works on the principle of increasing roll resistance, and thus damping the rolling motion, a typical example being the use of bilge keels. However, as Mr Beu points out, VSPs can generate both propulsion and steering forces, and the thrust they produce can be precisely tailored and adjusted extremely rapidly in magnitude and direction.

"This combination of very rapid thrust variation and generation of very high moments make it possible to use the VSP for efficient reduction of a ship's rolling motion," he told *OSJ*, "in particular when the ship is stationary or during slow motion along the longitudinal axis."